ENGINEERING NEWS-RECORD

A McGRAW-HILL PUBLICATION

You're looking at the dam from the cableway operator's control station. The track cable extends from the head tower 2420 feet across the river canyon to the tail tower (upper circle). The 8-yard bucket (lower circle) is loaded at a dock beneath the control station. G-E amplidyne control provides fast operation and flexibility, needs only minimum maintenance.

WORLD'S FASTEST CABLEWAY speeds dam construction . . . electrically!

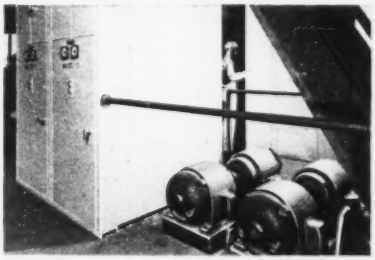
G-E powered rig at Pine Flat Dam hoists and hauls at same time; has poured 4000 yards in single day!

At Pine Flat Dam on the Kings River near Fresno, California, the General Electric powered cableway fastest in the world is setting new pouring records to help build the world's ninth highest dam. A Corps of Engineers project, the dam is being built by Pine Flat Contractors Associated Companies.

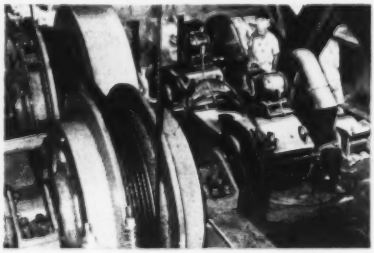
The Pine Flat rig, built by Willamette Iron and Steel Co., is the first ever designed with G-E amplidyne control for faster acceleration, greater precision, smoother operation. In addition, a new concept of power application permits hoisting and hauling at the same time. Automatic braking makes operation safer. Smoother acceleration lessens wear on cables and other equipment. And power losses during acceleration and deceleration are reduced.

For faster, safer, easier operation of *your* construction equipment, electrify with G-E drives and power distribution systems —backed by G-E engineering help in application, installation, and service. *General Electric Co., Schenectady 5, N. Y.*

Ask him today! **Whether you buy or build construction equipment, your G-E representative can show you how to do a better job at lower cost by complete electrification. Write him now, and he'll call on you at your convenience.**



Key to rig's speed—G-E amplidynes in head tower for hoist and haul drives provide smooth adjustable voltage control by limiting current during acceleration.



Carriage drive motors are built by G.E. for extra-tough applications like this. The completely separate two-motor hoist drive is also located in the head tower.

GENERAL ELECTRIC

New Apartment Trio in Brooklyn—These apartment buildings comprise Concord Village, a dignified residential community for 480 families, in Brooklyn Heights. Concord Village is near the famous Brooklyn Bridge, and adjacent to what is to become the Brooklyn Majestic Civic Center. It is convenient to the Borough Hall section, and to all local transportation. The 15-story red-brick structures have apartment units varying in size from 1½ to 4½ rooms. Each building has an all-welded framework of Bethlehem Structural Shapes.

Owners and Operators: Concord Freeholders, Inc., a corporation formed by eighteen mutual savings banks, Brooklyn, N. Y.; *General Contractors:* Paul Tishman Co. and Sol G. Atlas, New York; *Architects:* Benjamin Braunstein and Alfred H. Ryder, Jamaica, N. Y.; *Structural Engineers:* Weinberger & Weishoff, New York; *Steel Fabricator and Erector:* Lehigh Structural Steel Co., Allentown, Pa.

BETHLEHEM STEEL

SAVE TIME
WILD
HEERBRUGG
Modern Instruments for Modern Engineering
The WILD T1 Optical Transit. A "Job Doer" precision built and inherently accurate, it gives you the "jump" in today's building race. The T1 has proven that "Ease of Operation" can cut surveying time in half, yet retain the highest precision possible... more jobs through TIME SAVED.
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ENGINEERING NEWS-RECORD

Member

Volume 148 FEBRUARY 21, 1952 No. 8

WALDO G. BOWMAN
Editor

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Using the RIGHT Wire Rope for the Job?

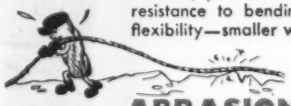
You'll get longer service life from wire rope if you do. Here are some points to keep in mind when you're selecting wire rope for any equipment . . .

STRENGTH

Don't send a boy to do a man's job. Make sure the wire rope you order has enough strength to take care of the maximum load—*plus* a necessary safety factor.

FLEXIBILITY

If your ropes undergo repeated bending over small sheaves, you'll need a flexible rope with maximum resistance to bending fatigue. Two things increase flexibility—smaller wires and preforming.



ABRASION RESISTANCE

Lang lay ropes, when properly installed, and constructions with large outer wires will help extend the service life of drag lines and other wire ropes that are subject to severe abrasive wear.

RESISTANCE TO CRUSHING

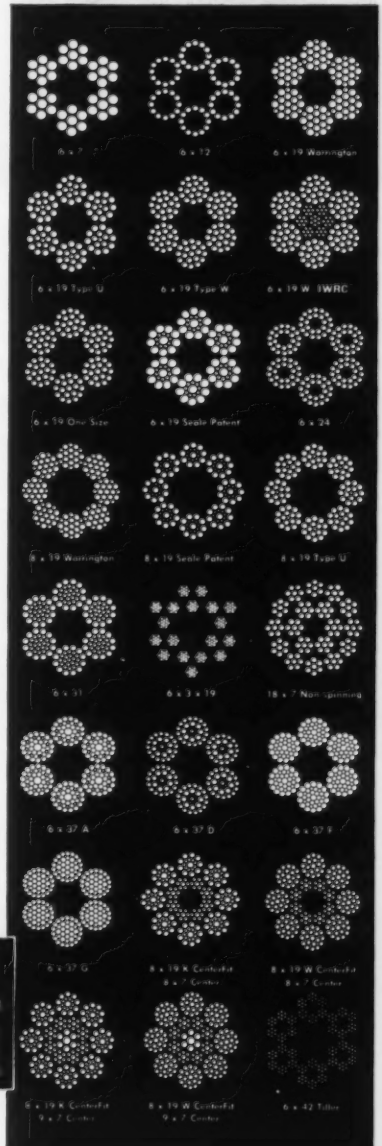
An independent wire rope center gives outside strands the support necessary to withstand crushing and distortion—large outer wires help spread the load over a greater area.

When you're looking for ways to cut operating costs, why not enlist the help of your nearest J&L Wire Rope representative? He'll help you select the *right* balance of these wire rope properties to get the longest service life on your specific type of equipment and operating condition.

Through years of research and actual operation in the field, J&L has developed a complete line of wire rope sizes and constructions. You'll find it profitable to cash in *NOW* on J&L experience and manufacturing know-how.

J&L STEEL

Select a Wire Rope that Fits Your Equipment Needs


6 x 7
6 x 12
6 x 19 Warrington
6 x 19 Type U
6 x 19 Type W
6 x 19 W IWRC
6 x 19 One Size
6 x 19 Seale Patent
6 x 24
6 x 19 Warrington
8 x 19 Seale Patent
8 x 19 Type U
6 x 31
6 x 3 x 19
18 x 7 Non-spinning
6 x 37 A
6 x 37 D
6 x 37 F
6 x 37 G
8 x 19 K Contrafid
8 x 19 W Contrafid
8 x 19 K Contrafid
9 x 7 Center
8 x 19 W Contrafid
9 x 7 Center
6 x 42 Tiller

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...that's how Delvac Oils help keep your engines!

Only a *clean* engine can give you the day-in, day-out dependability, power, and economy you must have for profitable operation. And you *assure* these results—both from Diesel and heavy-duty gasoline engines—when you use famous *Delvac Oils!*

Delvac Oils contain unusually effective detergent and dispersive properties, and have excellent resistance to oxidation. They greatly minimize formation of varnish, lacquer and sludge . . . protect pistons, rings, cylinders and bearings against wear and corrosion . . . help engines develop full power efficiently. Yes, and they help you keep maintenance costs gratifyingly low!

Call your Socony-Vacuum representative *today* for Delvac Oils. They are recommended or approved by 125 engine and equipment builders!

SOCONY-VACUUM

Here's Practical Help For Contractors . . .

Socony-Vacuum gives you . . .

- Help on maintenance problems.
- Individual, tested lubrication schedules.
- Advice on correct application of lubricants, proper handling and storing.
- One source of supply—available everywhere.
- Simplified inventory—with . . .

1. **DELVAC OILS**—for all gasoline and automotive-Diesel engines.
2. **MOBILUBE GX**—multi-purpose gear lubricant for all enclosed gears—manually operated transmissions, rear axles and final drives.
3. **MOBILGREASE**—in grades and types for proper lubrication of all chassis parts and engine accessories.

DELVAC OILS

Correct Lubrication for Contractors

THE FLYING RED HORSE COMPANIES: SOCONY-VACUUM OIL COMPANY, INC. MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

UNDER WAY...

Penrose Avenue Bridge, Philadelphia

Construction view of the 56 Monotube-supported piers for this important new bridge over the Schuylkill River—a joint project of the City of Philadelphia and the State of Pennsylvania. Design Engineers: Modjeski and Masters; General Contractor: Foley Brothers, Inc.; Pile Driving Contractor: Fehlhaber Pile Co.

MONOTUBES...

best for holding structures up —and holding costs down!

ALMOST 38 miles of Monotube piles, from 26 to 82 feet long, support the 56 piers (above) for the new Penrose Avenue Bridge, Philadelphia. It's one of the many types of construction where Monotubes are again and again the preferred choice. For with Monotubes, engineers and contractors always stand to gain important advantages . . .

First, Monotube taper-flute, *cold-rolled* construction means *extra* strength, extra structural value that can be utilized in designing for heavy loads, often requiring fewer piles. Moreover, their tapered tubular design makes inspection before concreting rapid and easy for positive assurance of condition after installation.

Secondly, you simply can't match light weight Monotubes for ease of handling, locating and driving . . . nor for simplified field splicing with fast cut-off and minimum waste.

On job after job it adds up to sound foundations with a new low in installation time and cost. Get all the facts on why these gains are possible with Monotubes. Just write to The Union Metal Manufacturing Co., Canton 5, Ohio.

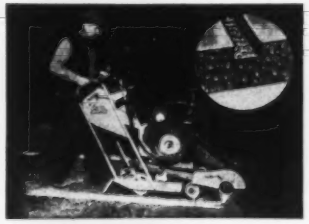
UNION METAL

Monotube Foundation Piles

CONSTRUCTION EQUIPMENT NEWS

A Preview of Equipment That Will Help You On the Job

PATCHES—TRENCHES SAWED FOR FLOOR—STREET REPAIR — Saw concrete floors, walks or streets! Saw narrow slit trenches 1" wide for conduit or any width for utility lines. Eliminate jackhammer fractures beyond the straight, smooth sawed lines.—**Write Clipper Mfg. Co., 2812 S.E. Warwick, Kansas City 8, Mo.**

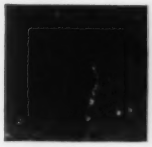


FLOORS, DRIVES, RUNWAYS EASILY CUT FOR REPAIRS— Rail tunnels, rail and pipe trenches, air lines and machinery bases were cut in dense concrete with a Model C-130 Clipper Concrete Saw and CDS-20 Diamond Blade at the rate of 5' per minute—3" deep. Tremendous savings were claimed by the contractor in removal and replacement.—**Write Clipper Mfg. Co., 2812 S.E. Warwick, Kansas City 8, Mo.**

TRACK SAW NOW CUTS LARGEST STONE, TRANSITE, TERRA COTTA — By placing C-15 Clipper Concrete Saw on tracks, a Cleveland contractor cut limestone veneer units from 15'x7"x15" quarry lengths. In addition to large, bulky shapes this model is efficient and dustless for inside patch and trench work.—**Write Clipper Mfg. Co., 2812 S.E. Warwick, Kansas City 8, Mo.**

CONTRACTION JOINTS NOW SAWED—Floors, walks, drives and runways now poured continuously (reduces bulkheading!) Then joints are sawed to eliminate hand forming and costly spalling.—**Clipper Mfg. Co., 2812 S.E. Warwick, Kansas City 8, Mo.**

STUDIES OF SAWED JOINTS PROVE VIRTUAL ELIMINATION OF SPALLING — Highway transverse joints sawed 2" deep are devoid of spalling after 1½ years in contrast to heavy spalling in a few weeks on formed joints, according to State tests.



Typical spalling after few weeks heavy traffic.

Sawed joints on same highway after 1½ years.

It's Done Easier, Faster, More Economical when you SAW BEFORE BREAKING with

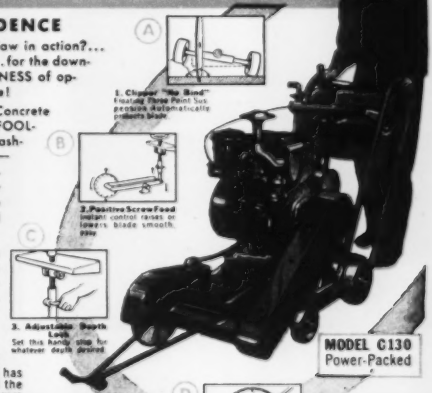
CLIPPER CONCRETE SAWS

CONCRETE EVIDENCE

Ever watch a Clipper Concrete Saw in action?... If not you've missed something... for the downright SPEED, EASE and SMOOTHNESS of operation is really something to see!

You'll recognize that Clipper Concrete Saws are designed for SIMPLE, FOOL-PROOF DUSTLESS performance. Dashboard controls — perfect balance — floating three point blade suspension* — and "job-rated" power plants...all combined for concrete and asphalt cutting far beyond anyones expectations.

*A pivoting front axle keeps the blade straight in the cut even on rough surfaces — stops binding — stops excessive blade costs.


A
2. Clipper "Tilt-Sled" Fractional Three Point Suspension automatically protects blade
B
3. Positive Screw Feed instant control raises or lowers blade smooth, easy
C
3. Adjustable Depth Lock Set this handy stop for whatever depth desired
D
4. Patented Spray Control Its value is measured in increased Blade Life
MODEL C130 Power-Packed

Experience Proves A Concrete Saw Must Have These Clipper Features

FREE TRIAL...

The outstanding policy of FREE TRIAL has been in effect since Clipper invented the World's First Masonry Saw many years ago! Clipper Concrete Saws are GUARANTEED to: Provide—regardless of hardness ...the Fastest Cut...at the Lowest Cost ...with the Greatest Ease...Anytime... Anywhere! You be the judge... TRY A CLIPPER ON **FREE TRIAL!**

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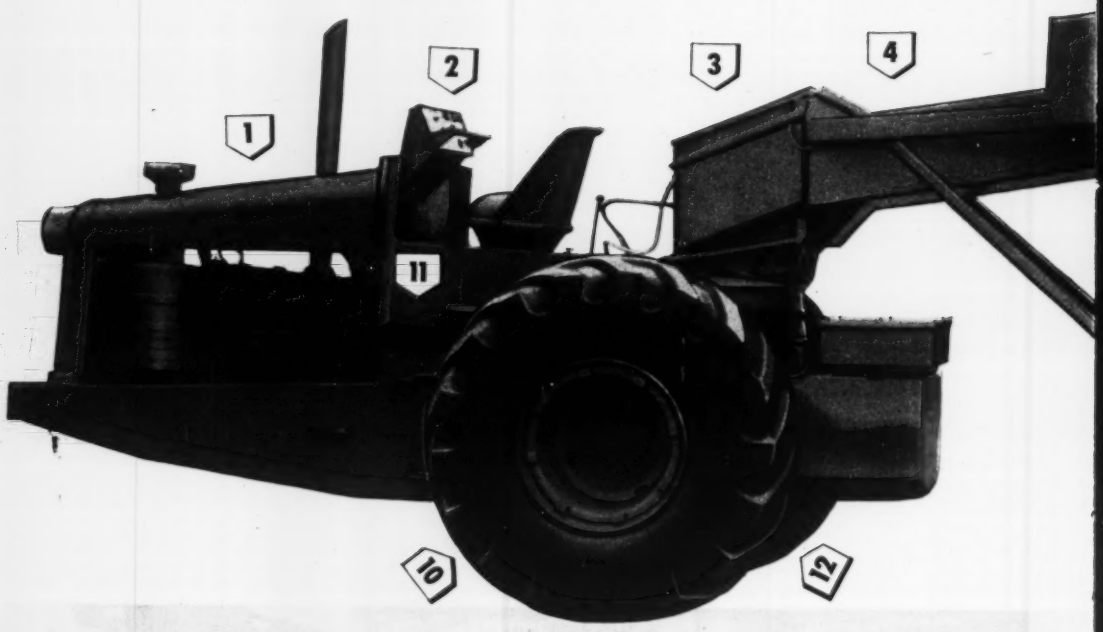


Le Tourneau 18-yd. TOURNAHOPPER

1 **Over 5 h.p. per ton of gross weight** ... works with job-proved 186 h.p. C Tournapull prime mover ... has plenty of power to haul full 18-ton loads up steep grades.

2 **Fingertip electric switches,** control dump and steer ... respond instantly ... increase safety margin ... reduce operator fatigue ... eliminate "end-of-shift" letdown. No troublesome hydraulic system.

3 **Positive electric power steer** swings prime mover without use of final drive ... "walks" rig out of mud-holes to firmer footing ... permits safe, accurate working and turning on steep slopes.

4 **90° turns within 15'8" radius** give 34'-long Tournahopper exceptional maneuverability for fast turns off fill, away from loader, and while hauling along narrow levee roads.

5 **Big, steel-reinforced bowl** carries up to 18 tons ... has 18 cubic yard capacity. Bowl withstands shock loads of rock and other heavy materials ... reduces body maintenance costs.

6 **9' x 11' top opening,** low 8'9" loading height, provide big target ... speed shovel, dragline swings, reduce spillage. Rig "tops out" loads with minimum movement under belt loader.

7 **Dump doors lift high,** leave bottom opening approximately same as top. Rocks, sticky material, dirt dump fast without damaging gates. Everything that goes in the top easily comes out the bottom.

8 **Power-controlled "clamshell" doors** wipe clean as they lift to swing up and out ... open full width or partially for controlled dump. No dangling gates.

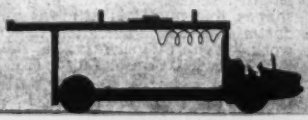
C Tournahopper prime mover is readily interchangeable with these 4 other hauled units to fit future job requirements.

* Trademark Reg. U. S. Pat. Off.
** Trademark

18-ton rear-dump TOURNAROCKER**

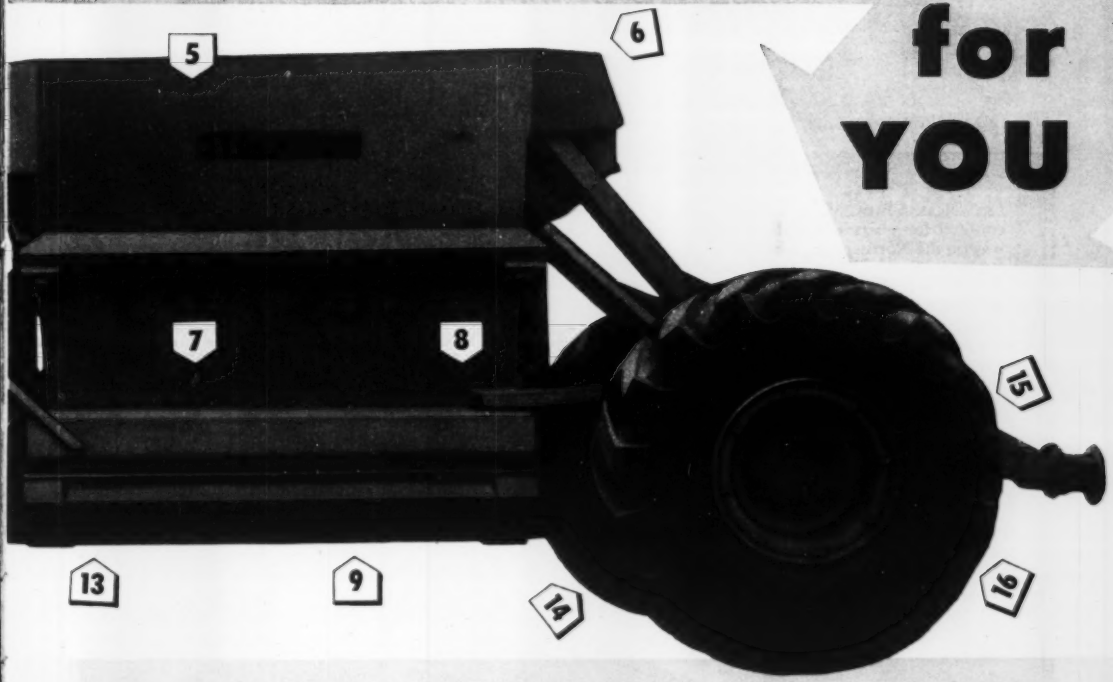
14-yd. (18-ton) TOURNAPULL*

15-ton TOURNACRANE*



20-ton flatbed TOURNAHAULER**

-DUMP dirtmover for YOU



gives you all THESE FEATURES:

9 **25" ground clearance under hopper** permits fast dump and turn over deep windrows. Open doors clear 42" and with prime mover in 90° turn position, you can swing to clear 42" boulders.

10 **51% of loaded weight on drive tires** gives plenty of traction in spongy, wet going. No "extra" small steering wheels to rob power as they break trail and bog down in soft going.

11 **Constant-mesh transmission** (with torque converter) available for instant gear changes. Torque converter automatically selects proper gear ratio, provides maximum power at all speeds, 0 to 33 m.p.h., removes shock loads in power train.

12 **Torque-proportioning differential** automatically delivers up to 4 times the tractive power of slipping drive wheel to wheel on firmest footing.

13 **Optional "Electrotarder" warms body** electrically, keeps loads from freezing.

14 **4-wheel, multiple-disc air brakes,** 3,763 sq. in. braking surface (more per ton than any other hauler) give operator confidence to use high speeds.

15 **Big 21.00 x 25 low-pressure tires,** all around, operate at pressures as low as 30 lbs., give extra flotation, minimize rutting in soft ground. They have less rolling resistance than duals . . . are bigger, stronger, heavier than duals . . . better adapted to withstand load and haul shocks. There's no divided face for rock fragments to wedge in and tear.

16 **Trouble spots eliminated** — no frame, sub-frame, springs, spring hangers, drive shaft, front-end steering wheels, or hydraulic system . . . less time out for maintenance . . . lower maintenance costs . . . smaller spare parts stock required.

Let us show you how Tournahoppers can lower your bottom-dump hauling costs.

Tournahopper—Trademark Tournapull—Trademark Reg. U. S. Pat. Off. 8225

R. G. LeTOURNEAU, INC., Peoria, Illinois

HIGH-SPEED, RUBBER-TIRED EXCAVATING • HAULING • LIFTING EQUIPMENT

LET EQUIPMENT

GULF PRODUCTS *and* FINE SERVICE

keep equipment rolling

on Long Island Parkway Project

Hendrickson Bros., Valley Stream, Long Island, have the contract for a sizeable portion of the work now under way on the Northern-Sagtikos Section of the Long Island Parkway System. The Hendrickson contract calls for 4.02 miles of Parkway grading, 4.76 miles of access road grading, and 1.26 miles of paving. The Northern-Sagtikos State Parkway and the Captree State Parkway are the final links in the chain of the Long Island State Parkway System.

"WE have used Gulf lubricants and fuels for over a quarter of a century because of their outstanding quality and their delivery to us when and where needed," says Mr. A. J. Hendrickson, President, Hendrickson Bros., Valley Stream, Long Island. "On this Parkway Project, we are getting the same fine equipment performance that we expect with Gulf products."

Gulf Quality Products and That Good Gulf Service team up to help many leading contractors do a faster, more profitable job.

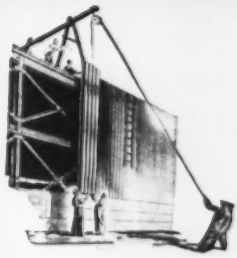
Gulf lubricants provide better protection against wear, and contribute to extra hours of trouble-free operation.

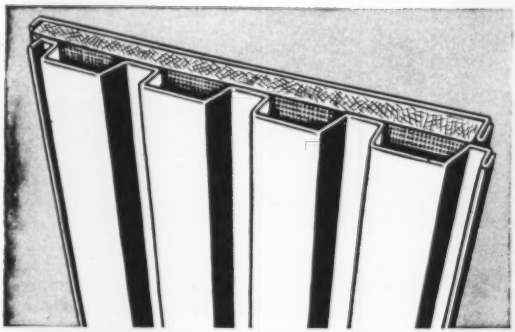
Gulf gasolines and Diesel fuels are clean burning, have low carbon content, and contribute to maximum engine power and efficiency.

Gulf quality products and fine service are quickly available to you through more than 1400 warehouses in 31 states from Maine to New Mexico. Gulf Oil Corporation · Gulf Refining Company, Gulf Building, Pittsburgh 30, Pa.

GULF

FOR WALLS...*fast*



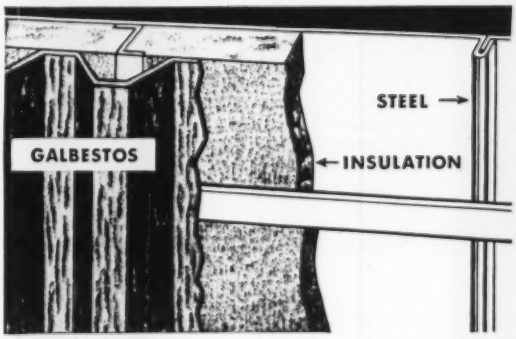


ROBERTSON Q-PANELS

(STANDARD)

Factory-assembled Q-Panels go up quick—50 sq. ft. in nine minutes. Only a small crew is needed to attach panel to frame. Perfect for powerhouses, administration, research and laboratory buildings. The distinctive fluted surface provides an interesting wall texture.

WEIGHT	SIZE	INSULATION	FINISHES*
In Steel—6 lbs./sq. ft.	2' wide; lengths up to 25' depending on material used.	Complete panel is 3¼" thick with insulation value superior to a 12" masonry wall with furred plaster. U-factor—.14 in aluminum; .18 in steel.	Steel, aluminum, stainless, Galbestos metal**. *Depending on availability.



ROBERTSON Q-PANELS

(G-TYPE)

Factory-engineered for quick field assembly, G-Type Q-Panels provide commercial and industrial buildings with good-looking, maintenance-free walls. G-Type Q-Panels are insulated, lightweight and capable of long spans to reduce the over-all weight of your building. They have the advantage of Top-Speed Fastening, a Robertson method by which greater areas of walls can be installed per crew. All work is done from the outside, eliminating interior scaffolding.

WEIGHT	SIZE	INSULATION	EXTERIOR
7 lbs./sq. ft.	12' long, width determined by size of Galbestos sheet.	U-factor—.16	Galbestos metal**

**THIS IS GALBESTOS METAL

Steel sheet with asbestos felt metallically bonded to it. The felt is then impregnated with asphalt and waterproofed. The bond is inseparable, to all purposes forming a new kind of material. Maroon, black or aluminum color; fabricated in a variety of shapes.

Write for Free Catalogs

1. Q-Panel (Standard)

2. Q-Panel (G-Type)

H. H. ROBERTSON CO.

2420 Farmers Bank Building
Pittsburgh 22, Pa.

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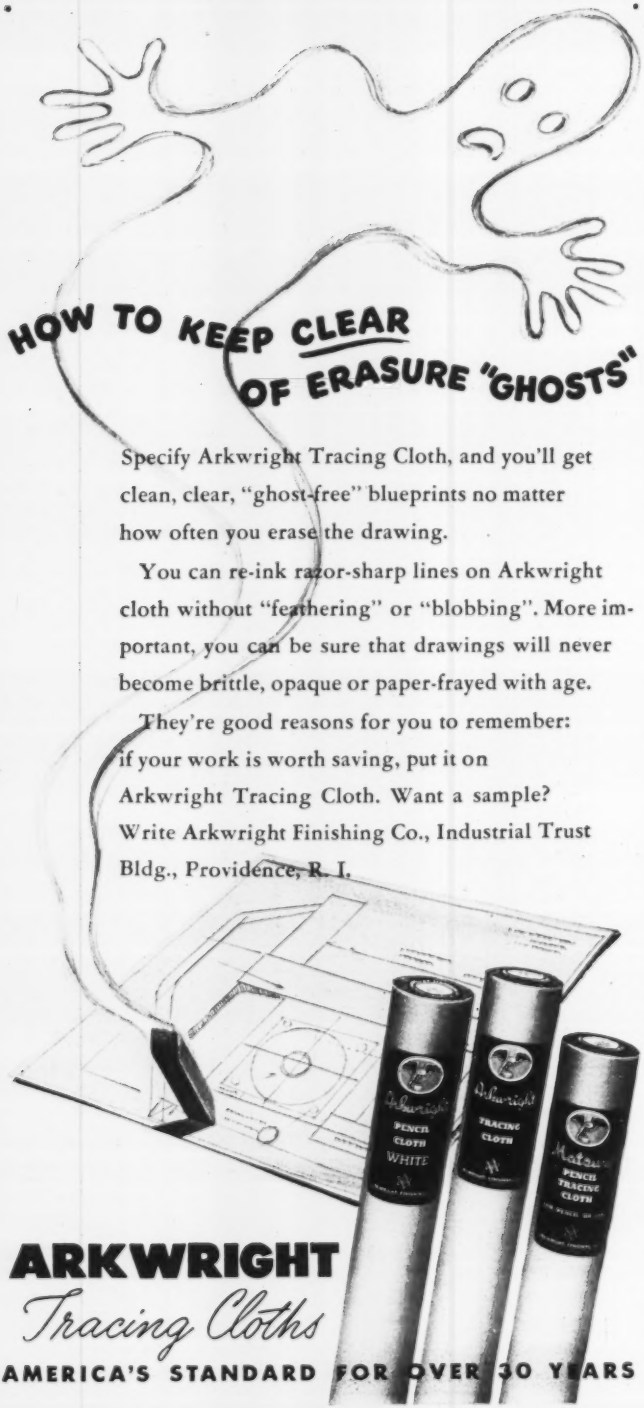
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READER COMMENT

Cost comparison unfair

Sir: From the standpoint of the builders of the Walnut Lane bridge, we have read with much interest several recent letters to you concerning prestressing in general, and the Walnut Lane bridge in particular. Homer Hadley's recent letter (ENR Dec. 20, 1951, p 11) has brought the discussion to such a point that I think some comment is in order from us.

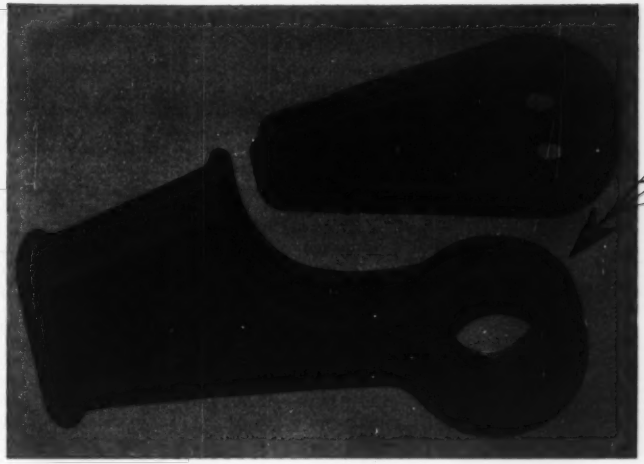
I think it hardly fair to judge the merits of prestressing by comparison between the Walnut Lane bridge and any other specific bridge. By now, full details of the Walnut Lane structure have been publicized enough to make it familiar to most interested engineers. I have no way, however, of comparing it with Mr. Hadley's King County bridge, to judge whether his representative unit square foot prices of $35.43 and $10.02 respectively give the correct picture.

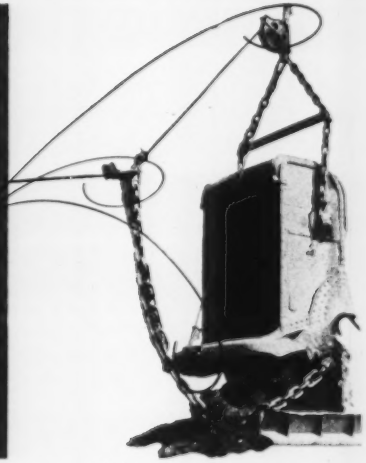
I have described the Walnut Lane bridge in quite a few formal and informal papers before interested technical organizations. In all of these, I have made the point that prestressing is not a cure-all and that it is merely another tool to be added to the kit of the designing engineer, to be used where construction and economic factors justify it.

I also feel, as I stated in a paper at the First U. S. Conference on Prestressed Concrete, last August, that if the building of the Walnut Lane bridge had done nothing else than to call vividly to the attention of U. S. engineers the possibilities of this technique, it would be worth while for that fact. We take some pride in having been the means of doing this.

Balancing our pride is the humbleness with which we approached this particular project. We realized when we started the design, and even more so now, that our knowledge of both design and construction methods was very meager. It is, of course, true that the term "watchmaking prestressing" might be applied to the work at Walnut Lane, especially when viewed in the light of the methods that American engineers bring to construction problems. As the first bridge of its kind in the U. S., with specifications requiring the collaboration of foreign engineers in its construction, the cost was bound to be higher than it would be today. The contractors who handled the prestressing also had to take into account the fact that no one in this country had previously done this type

(Continued on page 15)





Left: Under pressure, rope retains its round cross section without crushing or distortion, developing over 90% of rated rope strength.

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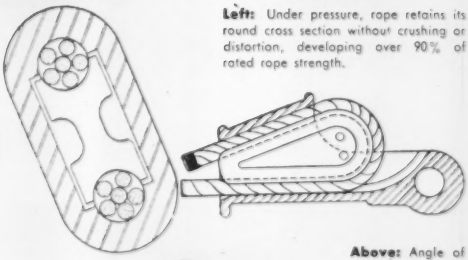
Bowl length is at least six times the rope diameter. *Every strand* of the rope maintains equal bearing pressure on both wedge and socket. Made in both closed and open types, and in all rope sizes. Also available in complete assemblies shown at the right.

For details of sizes and dimensions, see your *ESCO* representative; or mail the coupon requesting Bulletin 192, "*ESCO* Long Bowl Sockets".



Above: Angle of wedge prevents jamming and facilitates removal of wedge from socket.

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Drag Rope Hitch Yoke

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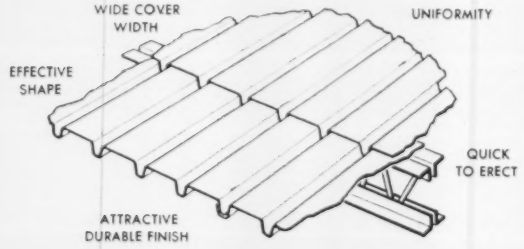
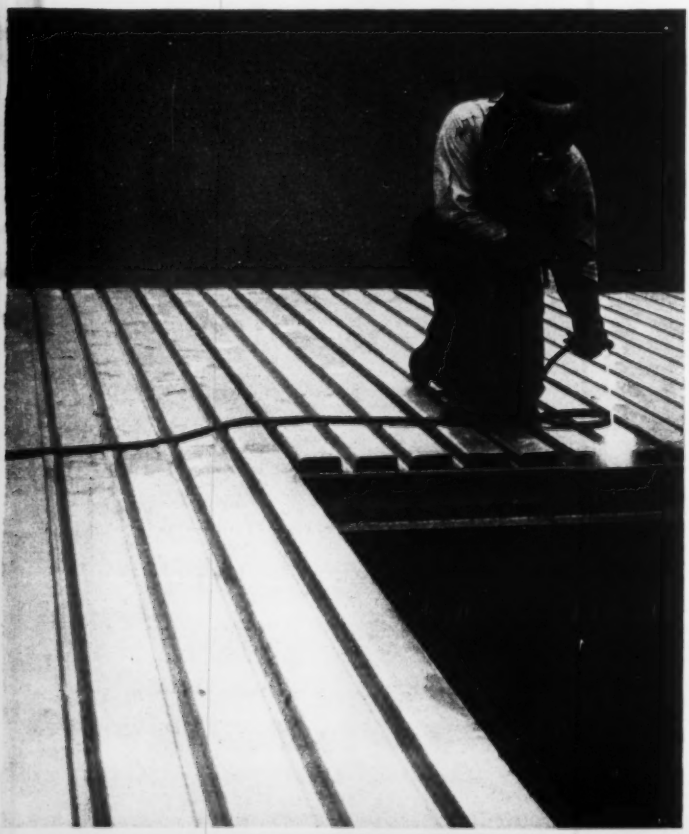
ALL ROOF DECK MAY LOOK ALIKE, BUT . . . knowing a few important differences can save you construction time, trouble and expense. Here's what to look for:



Granco Steel Roof Deck has longitudinal ribs 1⅜" deep spaced on 5¾" centers and is available in 18, 20, or 22 gauge. The ribs are flared at one end permitting proper nesting at end laps. Maximum sheet length is 14' 4". Positive attachment obtained by welding.



EFFECTIVE SHAPE—*Are you getting maximum sheet strength?* You are if the roof deck you select has been designed to obtain the proper relationship between rib and flat. To give maximum strength and cover per pound of steel, there must be a proper ratio between these rib (tension) and flat (compression) sections . . . the same relationship you find in Granco Roof Deck! In addition, Granco Roof Deck has the same thickness as a 2" x 4" giving maximum flexibility for architectural design.

WIDE COVER WIDTH—*Will an excessive number of side laps weaken the roof?* An expanse of frequently lapped sheets cannot possibly offer as much resistance to concentrated loads as a wide seldom-lapped surface. That's why it's best to select roof deck for maximum width with a minimum number of laps. Granco Roof Deck has a wide cover width of 28¾" . . . wider than most competitive brands. That means more strength and safety, less welding, and on large jobs, a considerable economy in laying time.

UNIFORMITY—*Are the patterns identical in every sheet?* In most brands of roof deck, yes. But, there are exceptions. When hands and human judgment are employed in the forming process, slight sheet variances must occur. These variances are greatly multiplied when sheets are placed end-to-end. Don't risk improper fits, endless re-matching of sections and slow, costly job progress. Specify GRANCO STEEL ROOF DECK because Granco sheets are rotary press formed, *machine-made* for uniformity and perfect fit. "Sheet crawl" is virtually eliminated.

ATTRACTIVE DURABLE FINISH—*How will it look in 5, 10, 15 years?* Of course, that will depend largely on weather and atmospheric conditions in your locality. But, some roof deck is better prepared to withstand age and oxidation than others. Granco Roof Deck, for example, is protected with a tough, rust-resistant alkyd resin, baked on for longer life. Granco Deck looks better, lasts longer, creates a striking panel effect for ceilings, too.

QUICK TO ERECT—*Is your roof deck the correct shape for fast placement?* It *does* make a difference! Long, narrow sheets are cumbersome to handle, difficult to lay properly. The same applies to short, wide sheets. Granco Roof Deck, on the other hand, is a convenient shape for fast placement. Each sheet covers 34 square feet. Sheet dimensions were designed with speed in mind.

Write for Free Booklet—*Gives description, physical properties, complete loading tables and suggested specifications for Granco Steel Roof Deck. Request booklet No. BDr-511-9A.*

SEE OUR LISTING IN SWEET'S CATALOGUE.

GRANCO STEEL PRODUCTS CO.
(Subsidiary of Granite City Steel Co.)
Granite City, Illinois

(Continued from p 12)

of work. For this country, this was pioneer work, and it was natural that unit costs would be higher than for some well established methods.

It has been pointed out in other papers that prestressing was only used at Walnut Lane after some comparison with other methods. A steel bridge had been ruled out because of the location of the bridge in Fairmount Park, one of the most beautiful natural city parks in the world. Bids that were taken on a concrete arch proved to be higher than those for the prestressed structure. The prestressed bridge gave the beautiful lines that the Art Jury required for esthetic reasons at this location.

It is not possible to list factors that would bring the cost of another type bridge at Walnut Lane down to the $10.02 per sq ft cost of the King County bridge. It is pointed out, however, that the $698,383 bid price for the Walnut Lane bridge included $100,783 for work on approach streets, including sanitary sewers, which were in no way connected with the bridge itself. The contract also called for testing a full size girder, and the bid price includes at least $30,000 for this work. For our own reasons, we used an ornamental aluminum handrail on the bridge, for which the bid price was $33,750 and which is probably not comparable with the King County bridge.

It should be realized, of course, that the King County bridge, half as wide and almost four times as long, should give cheaper unit costs.

Other factors that should be considered are the loading, which on Walnut Lane was H20-S16, and the appearance of the box girder King County bridge, which is probably of a type that would not have obtained approval of our Art Jury in the Walnut Lane setting.

SAMUEL S. BAXTER
Acting Director
Department of Public Works
Philadelphia, Pa.

Color line?

Sir: Your article, "A New Look at Engineering Employment" (ENR Nov. 29, 1951, p. 49) reports the immediate need of 22,000 new engineering graduates. I should like to mention that there are a sizeable number of professionally trained engineers who are unable to find employment by virtue of the color of their skin. I am personally acquainted with several Negro engineers who are unable to find employment in their profession.

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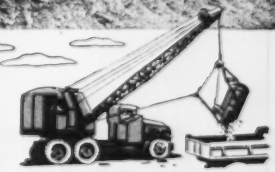

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INDUSTRY PLANS RECORD INVESTMENT PROGRAM

U. S. industry plans to spend $21.2 billion for new plants and equipment in 1952, according to McGraw-Hill's annual survey of business investment plans.

Capital spending will set a record if these plans are carried out. Plans call for almost 13% more than the record amount invested last year. Manufacturing industries account for nearly $13 billion, with mining, railroads, other transportation and communications and utilities making up the rest.

About 52% of this investment will go for expansion—which includes a lot of new construction. The big investment program will boost U. S. manufacturing capacity by 8.4% in one year, with the largest increases coming in defense and defense-supporting industries.

• **Good News**—Industry's big plans mean industrial construction will probably reach record heights this year. But that's not news to builders—they already have contracts for most of this building. The good news from the survey is its effect on the business outlook.

Everyone knew capital expenditures would be high in 1952. But economists were worried about a possible drop in the second half of the year. Capital spending is such a big and basic item in total business that a marked drop could start a general business slide.

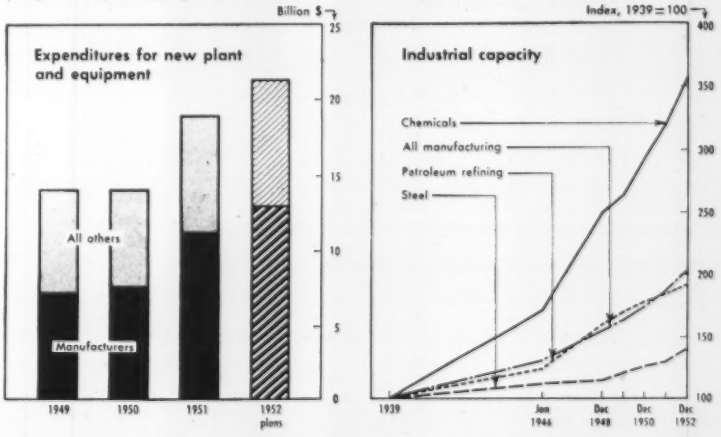
But the survey shows that spending will probably be high all year, with only a slight dip now indicated for the second half. And, with shortages scheduled to hold up a large share of industrial work in the second quarter, capital expenditures in the second half may actually show no change from the first.

This raises the odds on a high level of business activity all year long. With capital spending staying high and defense spending rising steadily through most of the year, it's hard to expect a drop in the general level of business.

Next week's Trend has some more good news from the McGraw-Hill survey—dealing with the years after 1952.

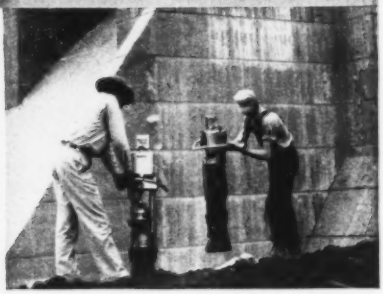
• **Shortages Continue**—**This is not unmixed good news, though. Industrial expansion will continue to get a big share of critical materials—especially copper and structural steel—all year long. That means continued pressure on supplies for other parts of the economy, including housing, commercial and much public construction.**

Capital spending up 13% in '52 . . . . capacity increases vary



ON OUTSTANDING JOBS ACROSS THE NATION

BARCO *is the Answer!*



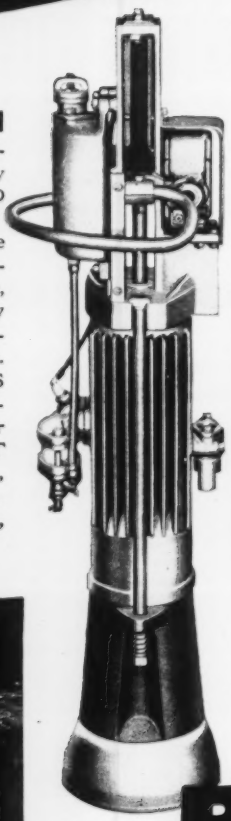
TEXAS DAM— On projects costing millions of dollars, it pays to use construction methods that insure permanence. That's why soil compaction is a very important factor in the construction of dams. This picture shows Barco Rammers working on the Whitney Dam Project on the Brazos River near Whitney, Texas. *Contractors:* L. P. Reed, Inc., and Martin & Grace, Inc., both of Clifton, Texas.

SOIL COMPACTION

is the key to *better construction* on important projects throughout the country —AND ON THESE JOBS, BARCO IS THE ANSWER!

Contractors and engineers, alike, are finding that unless soil is properly compacted during construction, settlement, erosion, and structural damage can easily develop in areas near abutments, foundations and walls, and other critical points.

This is where BARCO RAMMERS quickly pay for themselves! See for yourself—ask for a demonstration. *Send for our latest catalog and new "COST DATA" Bulletin.* BARCO MFG. CO., 1814C Winnemac Ave., Chicago 40, Ill. *In Canada:* The Holden Co., Ltd., Montreal, Canada.



OHIO FACTORY BUILDING—The Austin Company recently attracted nation-wide attention with the design and construction of an ultra-modern plant for The Lincoln Electric Company in Cleveland, Ohio. Evidence of the high standards of construction maintained by The Austin Company can be seen in the use of Barco Rammers in the above picture. The Austin Company has many Rammers in use on building projects throughout the country.

MISSOURI HIGHWAY—The State of Missouri has been one of the leaders in studying the value and importance of soil compaction on highway construction for preventing settling, washouts, and erosion. This picture shows Barco Rammers used by Fred Weber Contractors, Inc., St. Louis, on Missouri's famed *Natural Bridge Road.*

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FREE ENTERPRISE— THE CORNERSTONE OF AMERICAN PROSPERITY

EDITORIALS

A new unity proposal

A COMMON-SENSE APPROACH to unity in the engineering profession is found in the latest report of the exploratory group set up nearly three years ago to study and report on that subject (see p. 27).

Even though some questions remain unanswered, the majority of the Exploratory Group has concluded that continued progress demands some measure of action. Therefore, it recommends that the simplest—and apparently the most widely favored—of the four chief unity proposals should be more fully explored by the simple expedient of having the Engineers' Joint Council ask the societies that are not now members of council to join. A minor modification of the EJC constitution is all that would be required.

Only dissent from this proposal came from the representative of the National Society of Professional Engineers, Alex Van Praag, Jr. His position is understandable. To the great majority of NSPE members that society is THE appropriate unity organization, set up for that purpose, and organized on a more democratic basis than EJC.

However, there is a basic weakness of the NSPE position. It lies in the fact that after 17 years of effort only 15 percent or 24,200 of the 167,000 registered engineers of the country have joined the society. NSPE, therefore, is not nearly as representative of engineers as is EJC with 133,000 in the constituent societies. Also, EJC has the great advantage of being able to raise the money that is needed for effective action on national matters of interest to engineers.

Mr. Van Praag, in his minority report, makes an urgent plea for more time in which to educate the profession on the issues yet to be resolved. But the trouble is that, in the meantime, some fields where engineers should be acting in unison are being neglected—vocational guidance for young men seeking to enter the profession, professional training for engineering students, and continuing education for young engineering graduates.

The Engineers' Council for Professional Development has done a splendid job of supplying basic vocational guidance material and in aiding local guidance committees of the Founder Societies and some of the state societies of professional engineers in this work. But it needs to have its work more closely integrated with that of the state societies. And ECPD is about to inaugurate a program of post-college training for young engineers that has great promise. But it can hardly succeed unless it has the whole-hearted support of the state societies that now are the backbone of NSPE. The only quick way to assure that support is through having NSPE participate in the activities of EJC.

Here then is an area in which there can be no question as to the real need for close cooperation. It can be obtained easily and quickly by the step now recommended by the exploratory group. It cannot be obtained by further discussion of such abstract and relatively unimportant questions as the ultimate form of the unity organization and how the individual engineer is to be represented in this unity organization.

The great diverter

THE FEDERAL GOVERNMENT was characterized as "the largest single diverter of automotive taxes from highway purposes" by the late Ray F. Smock, former secretary for highways in Pennsylvania in a study of highway finance written just before his death in November. That fact needs to be kept in mind and brought home to members of Congress when the hearings begun last week are resumed. Against the background of this diversion of road taxes the logic of the request of the American Association of State Highway Officials for a large increase in federal aid to highways can hardly be denied.

President Truman, in his budget message to Congress, said that highway construction is primarily a function of the states. Hence he suggested to Congress that federal aid could be cut below the current $500 million in the years immediately ahead. Most people will agree with the President's first statement. But when it is realized that the federal government collected almost one and one half billion dollars from its citizens in 1950 in federal taxes on gasoline, oil, tires, tubes, automobiles, trucks and parts, and only turned back $500 million in federal aid to highways, the President's recommendation that federal assistance to the states be cut is open to question.

Even the federal gasoline tax alone in 1950 was over $500 million. This year the federal take will be far above that amount due to increased auto and truck registration and use. In addition the half-cent increase in gas tax that went into effect in November will greatly swell federal highway tax income.

In the light of these figures the AASHO request for $810 million in federal aid for the fiscal years beginning July 1, 1953, and July 1, 1954 is not at all out of line. Moreover, by then, the AASHO hopes that there will be more steel for highway construction, which should make a much larger program possible. In view of the serious need for better roads no time should be lost in putting such a program into effect.

If the federal government is to stay in the automotive tax field it should carry a larger share of the cost of the expanded program. If Congress is unwilling to permit that, it should legislate the federal government out of the road-tax field, letting the states collect the money directly to help pay their increasing load of highway costs.

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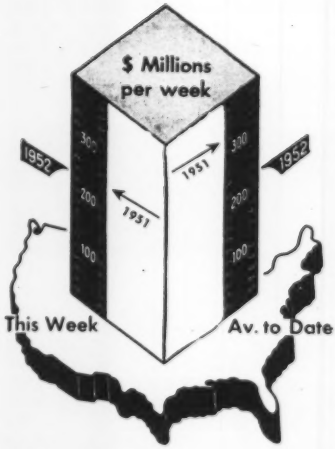

	This Week	Cumulative 8 wks. 1952	1951	% chge
Waterworks	$2.8	$44.0	$30.1	+46
Sewerage	5.7	29.1	52.9	−45
Bridges	9.9	36.6	46.4	−21
Highways	11.4	154.8	132.23	+17
Earthwork, Waterways	5.6	62.0	40.7	+52
Buildings:				
Public	25.5	226.1	418.5	−46
Housg., pub.	13.4	116.3	133.8	−13
Housg., priv.	59.3	412.2	361.7	+14
Commercial	9.2	65.3	118.3	−45
Industrial	45.5	467.2	1,026.5	−54
Unclassified	33.8	205.9	176.8	+16
Total	**$222.1**	**$1,819.5**	**$2,538.0**	**−28**

NOTE: Minimum size projects included are: Waterworks and waterways, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR COST INDEX

Index Base = 100		1913	1926	1949
Constr. Cost.	Feb. '52	549.26	264.03	115.14
Bldg. Cost	Feb. '52	406.05	219.50	115.42
Volume	Jan. '52	470	191	136

HOPEFUL HORIZON—"Before the end of 1952, we expect there will be ample steel for all foreseeable highway needs," J. A. Ingwersen, vice-president of Armco Steel Corp. said last week. Already there is an easing of steel supplies for corrugated metal pipe and similar products. Even structural steel is expected to be more plentiful by the middle of this year, he said. Material required for other industrial expansion will largely have been supplied by the middle of 1952. This will result in easing some of the pressure on structurals.

FAST TAX WRITE-OFFS SLOW DOWN—The Defense Production Administration last week announced a tighter policy in granting of accelerated tax amortization certificates starting March 1. Under new regulations all expansion projects for fast tax write-off must be certified in advance by a defense agency which has jurisdiction over the raw material or finished product to be produced. Requests will be examined in the light of critical materials supplies, plant dispersion, manpower, and anti-monopoly laws, DPA said.

LABOR SURPLUS AREAS—New York's Franklin D. Roosevelt Jr. last week accused Defense Mobilizer Charles E. Wilson of having "purposely delayed" designation of New York City—where thousands of construction workers are jobless—as a critical unemployment area. The accusation brought release by ODM of an order certifying New York and 22 other city contracts. Also included was Detroit.

PLAN FOR STRUCTURALS—Structural steel fabricators have urged the National Production Authority to set up a long-range program for distribution of structural steel. Such a program would permit builders to have advance notice so that plans can be drawn up, sites selected, and other time-consuming details taken care of, before the structurals are actually made available to them. It would also help to get the fabrication business back to normal concurrently as the structurals shortage eases. In its reply to the plan, NPA said it is now trying to find out when the peak of defense construction will pass. Before the peak is reached, it will dole out larger quantities of structurals to highways, schools, office buildings and other commercial projects, it promised.

IN THIS ISSUE—Wage controllers plan to let industry raise rates (p 23). . . . Leaders of the construction industry propose changes in mobilization policies (p 24). . . . New housing regulation adopts suggested changes (p. 25). . . . Arkansas' highway probe turns up some more interesting facts (p. 26). . . . Engineers Joint Council studies move for unity (p. 27). . . . Largest coal bridge structure fails (p. 28). . . . Water policy group takes wraps off plan (p. 29). . . . New roof slab technique makes its debut (p. 30). . . . Port of Boston is reshaped (p. 32). . . . Highway radios aid in rescue (p. 35). . . . Park projects don't wait for summer (p. 38). . . . Morrison-Knudsen opens new horizons for Afganistan (p. 45). . . . National Joint Board for jurisdictional disputes may fold (p. 56). . . . Contractors feel out foreign steel (p. 58). . . . Florida's skeletons may return to life (p. 96).

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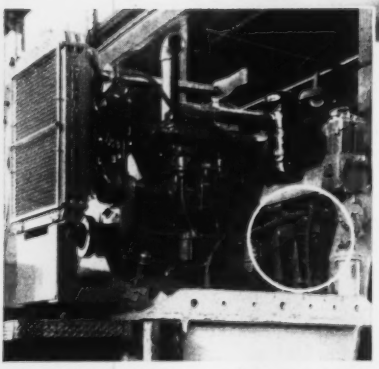

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CO-CHAIRMEN Thomas J. Kalis and Prof. Archibald Cox of CISC.

Wages agency moves to raise ceiling on construction pay

By Joe Gambatese
Washington Staff

Wage controls in the construction industry will be relaxed in time to write higher wages into new labor contract this spring. That is the hope of the Construction Industry Stabilization Commission. Final decision, however, rests with the Wage Stabilization Board, under which CISC functions.

Just how much, and in which ways, wages will be allowed to rise and additional fringe benefits approved has not yet been decided. The public, contractor and AFL building trades representatives who make up CISC have made recommendations to WSB. But because the recommendations are subject to approval of WSB—and there is some question whether WSB will go along on the CISC proposals—they are not being announced until final action is taken by WSB.

CISC, ENGINEERING NEWS-RECORD learned, has framed two recommendations:

1. That the area rate ceiling of 10% above the Korea level, in effect since last July 26, be raised to reflect, at least in part, the rise in living costs since last summer.

2. That contractor contributions to health and welfare plans be approved within specific limits.

The Bureau of Labor Statistics Consumers' Price Index—the measure used for living-cost changes—has risen about 4½% since January 1951, base date for wage increases allowed by WSB in addition to 10% "catchup" policy. WSB rules do not apply specifically to wages of mechanics and laborers on on-site construction, who come under CISC jurisdiction, although CISC must conform to them in general.

• **Policy change**—CISC committed itself to a revision of its wage policy when, last July, it set the 10% policy to run until Dec. 31. Whatever change is made permitting higher wages, it is probable that the higher ceiling will stand for another long period, maybe a year, in order to fit special needs of the industry.

Rather than raise the 10% figure, the revised policy may allow something extra in a given number of cents per hour. According to Archibald Cox, co-chairman of CISC, a switch from percentage to cents per hour was made by the Wage Adjustment Board, CISC's counterpart during World War II.

This would help low-paid crafts and also tends to preserve the cents-per-hour differentials between different crafts and different areas, he says. At the same time, however, Cox points out that a shift to cents per hour, rather than percentage, would create still more divergence between the policies of CISC and those of WSB to which it must conform as much as possible.

On welfare benefits, CISC is asking WSB to approve a policy permitting contractors to put a certain number of cents per hour into a city-wide fund, from which disability, hospitalization, life insurance and other benefits could be bought for the workers.

The amount of contribution to be approved would be enough to give the workers the benefits which WSB has approved for other workers in WSB Regulation 19 and Resolution 78, issued Dec. 23. These include:

(1) Temporary disability pay up to 26 weeks.
(2) Hospital expenses up to 30 days.
(3) Surgical expenses up to $200.
(4) Life insurance up to $1,500.

WSB also has approved any welfare benefits for which the employee shares at least 40% of the cost.

• **May get approval**—This policy would be self administered. Contractors may now obtain approval from CISC to provide these and other fringe benefits which meet area practices.

Pension policy will have to await formulation of basic pension policy by WSB.

CISC plans to publish, soon, all of the more than 2,000 area rates it has set. These are the ceilings, by crafts and by areas. You can't pay higher than the area rate without approval.

If you were paying higher than the area rate before last July 26, when the area rate policy was established, you may continue to pay the higher rate only until the job is finished, unless you get CISC approval to pay it thereafter.

Co-Chairman Cox is professor of law at Harvard University. The other CISC co-chairman is Thomas J. Kalis, assistant solicitor of the U. S. Labor Dept.

Structurals squeeze

Serious unemployment and idle plant capacity in the structural steel fabricating industry is predicted for early summer this year by the American Institute of Steel Construction, unless approved orders for construction are immediately released by the government in adequate volume. Their statement followed a meeting of the Board of Directors in New York City last week.

ADVISE ON CONSTRUCTION ORDER—Four general contractor members of the NPA's Construction Industry Advisory Committee who attended last week's sessions in Washington are: (Left to right)—G. W. Maxon, H. C. Turner, Jr., A. S. Horner, Walter L. Couse, all officials of the Associated General Contractors. (ENR photo.)

Regulation changes sought

All parts of the construction industry joined last week in a Washington meeting to consider the common problem of maintaining volume and vigor in the building business during the defense emergency.

Nearly 70 national organizations—representing the architects, engineers, contractors, builders, producers, dealers and investors of the country—took part in a full-day session of the Construction Industry Advisory Council—sponsored by the Construction and Civic Development Department of the U. S. Chamber of Commerce.

At the end of the day, it adopted recommendations urging closer liaison between mobilization agencies and the construction industry. Specifically, the recommendations put the weight of the council behind several proposals that government officials are now working on:

In the Defense Production Administration, the council wants clearly defined responsibility for handling construction problems, prompt investigation of the discrepancies between government and industry reports on the available supply of critical materials, and better quarterly requirements for construction—screening of both civilian and military.

Further, the council urges that the government make it a policy to encourage planning in advance for needed projects, both public and private. To assist this policy, it recommends two actions much like those that the National Production Authority hopes to put in effect.

(1) Grant provisional authorization for future starting of less essential projects, and

(2) Make full advance allotment of materials for a project when the first quarterly allocation is given—with the scheduled allotments for later quarters subject to cancellation only in event of war.

• **Unity sought**—In addition to the statement of recommendations, the council also gave expression to the age-old desire of the construction industry for a stronger, united front in times of stress.

The meeting instructed the council chairman—Ralph Walker, New York architect—to appoint a committee to study means of further strengthening the leadership of the construction industry.

Presenting the labor viewpoint, Richard J. Gray, president of the Construction and Building Trades Department, AFL, evoked a warm response by suggesting a management-labor alliance to resist government encroachment on private enterprise.

DPA materials allotments—and uncertainty as to allocations for future quarters—are causing serious construction unemployment in areas like New York and Detroit, he said. As a remedy, he proposed a labor-management-government screening committee to pass on all requests by claimant agencies, including the military.

Mobilization Director Charles E. Wilson sounded a note of warning at the council luncheon. "We won't be able to spare materials for any substantial amount of commercial construction for maybe another year." But he cheered them a bit by saying that DPA Administrator Manly Fleischmann, sitting alongside him, had some figures that indicate nonindustrial building might do a little better than Wilson had predicted.

Answering a question of the large quantity of structural steel in warehouses, Fleischmann admitted that NPA had made an error of judgment in setting warehouse allowances too high. That—along with foreign steel—accounts for the many thousands of tons reportedly in stock there. Proposed revision of the construction regulation will increase the market for the foreign steel, he said.

The regulation to which he referred was the subject of another all-day conference on the previous day between members of the Construction Industry Advisory Committee and NPA officials.

• **CIAC recommendations** — On the proposed regulation (ENR Jan. 31, p. 25), the CIAC recommended against any further tightening of the use of structural steel in store, office and other commercial and public building projects.

It opposed a provision which would limit builders in "self-authorizing" their purchases of small quantities of steel and copper. And it urged that builders be permitted to use foreign steel and salvage steel, when available, without obtaining specific approval from NPA in advance. NPA announced it would give these counter-proposals careful consideration and call another meeting before issuing the regulation.

As for the housing regulation, separate and distinct from the regulation covering commercial and industrial construction, the CIAC protested restricting new houses to one and a half bathrooms each, and limiting the use of metal according to the square feet of floor space.

It told NPA to seek conservation of metals, and its goal of building smaller houses and more of them, simply by setting a ceiling on metals used in each dwelling.

(See story on next page)

Housing regulation altered to meet builders objections

Government people listened receptively to what the Construction Industry Advisory Committee had to say at last week's Washington meeting. Twenty committee members told the National Production Authority and the housing agency exactly what the industry thought of the proposed new construction regulations. (See story on page 24.)

Results will show up in the final drafts of revised CMP Regulation 6 and will be particularly noticeable in the housing order.

Agency people would like to issue it this week, if possible, and shut off any rush of home builders to start new houses before the order takes effect. But there was a chance that mobilization chiefs might decide to call a special meeting of the industry advisory committee to dissect the new draft before publishing it. This would delay the effective date until next week.

Self-authorization limits for single-family to four-family houses had been pretty well agreed on, but they still awaited top-echelon approval by both NPA and the Defense Production Administration. Starting with recommended industry changes, the Housing and Home Finance Agency had worked out with NPA a revised draft that puts materials restrictions on a more realistic and workable basis than the first draft.

• **Here are the prospects**—There will be no limitation on bathrooms. The original draft would have limited bathrooms to 1½ per dwelling unit, under the self-authorization procedure.

The order will allow a basic amount of copper for wiring in every housing unit, no matter what its size. Beyond this basic minimum, the order undoubtedly will go along with the recommendation to allow a small additional amount of copper for each 100 sq ft of area—up to a specified maximum of the metal.

To take care of electrical needs, the order is expected to set 25 lb of copper as the basic allowance, with ½ lb additional per 100 sq ft up to a limit of 30 lb.

Having accepted the formula for electrical copper, the draft revisers applied the same thinking to other materials limitations in the self-authorization schedule. Thus the proposed order set basic minimums plus additions per 100 sq ft—up to specified ceiling limits—for carbon steel, sheet metal for heating ducts, and copper pipe water systems.

• **Metal rules**—The final order is almost certain to follow this pattern of controlled materials allowances per dwelling unit:

• **Carbon steel**—(Excluding structural shapes) A basic quantity of probably 900 to 1,000 lb, with increases on an area basis to a maximum of 1,700 lb. In addition, the order was expected to permit use of foreign and salvage steel without charge against the self-authorization allowance or—on larger projects—the quarterly allotments. Builders of self-authorized single-family to four-family houses would have an opportunity to obtain structural shapes only in the form of used or foreign steel.

• **Supplemental carbon steel**—For houses using sheet metal heating ducts—a basic allowance of about 350 lb that could step up by area increments to a maximum of probably 500 lb.

• **Copper**—For houses using copper pipe water systems—a basic figure in the range of 105-110 lb, with an increase for each 100 sq ft of area up to a probably maximum of 125 lb. This top limit would be 5 lb less than proposed in the first draft. The revised version would eliminate the requirement for use of lighter tubing (types L & M).

The amended draft would encourage use of materials from inventory. It would allow builders to install additional quantities per dwelling unit out of their own stocks in roughly these proportions: copper wiring about 5 lb; copper tubing, perhaps 25 to 35 lb; carbon steel, probably 100 lb.

At the same time, it would discourage the building up of inventories by limiting the period within which a builder could make such added use of stockpiled materials. The order, when issued, is expected to set a cutoff date 90 days ahead. No house started after that date would be eligible to use extra materials out of inventory.

In addition to standard copper wiring allowances, the rewritten draft included a special provision for houses equipped with electrical radiant heating, widely used in the Tennessee Valley and the Pacific Northwest, where power costs are low. The draft would allow a house so equipped to use additional copper conductor, up to a flat limit of about 15 lb under the self-amortization procedure as outlined by the NPA.

H. E. Foreman presented testimony for the AGC.

Contractors seeking judicial review law

Conflicting views were presented to the McCarran subcommittee of the Senate Judiciary Committee last week on a bill to allow judicial review of disputes arising under government contracts.

The bill (S. 2487), introduced by Committee Chairman Pat McCarran, aims to remedy the effects of the Supreme Court decision in the Wunderlich case (ENR Dec. 6, p. 25). The Supreme Court held that a government contracting officer or his department head has the final say in disputes under a government contract except where fraud can be alleged and proved. McCarran's bill would permit judicial review of cases even where no fraud is alleged.

The Associated General Contractors testified in favor of judicial review in disputes of fact between contractors and contracting officers. H. E. Foreman, managing director of the contractors association and John C. Haves, legal counsel for the association, called for new legislation which would provide:

1. That all government contracts be subject to appeal to the courts from rulings of contracting officers and department heads as to questions of both fact and law.
2. That existing contracts be modified accordingly.
3. That cases in legal process at the time of the Wunderlich decision—and all disputes arising since that date—have full right of court appeal restored to them.

Different viewpoints were expressed by representatives of the General Accounting Office and the Justice Department.

Highway probe gets results

While a special commission continued its investigations into sometimes startling aspects of the business operations of the Arkansas State Highway Department, the probe had produced two concrete results last week:

1. The highway commission authorized the employment of Little Rock accounting firm, to do a $25,000 revamping job on the department's accounting procedures;

2. County foremen—whose low salaries were blamed in part for inefficiency of the department—got raises of $25 a month, to bring their pay up to $200.

A debit against the investigation, meanwhile, was a warning from federal authorities that the state (which has held up new contract awards during the lengthy investigation) is falling behind in its use of federal-aid highway funds.

Meanwhile, the probe (ENR Feb. 7, p. 27) continued under the aegis of a special Highway Audit Commission, appointed by the state legislature. It continued also to turn up some strange "business" transactions.

• Another protest—Chief Engineer A. E. Johnson of the highway department, who previously told the HAC he had protested in writing against excessive stockpiling of road materials, bared another interesting angle.

He testified that the secondary road system was largely the Highway Commission's "own affair." His office generally recommended only on primary and main secondary roads. One state force job originally estimated at $15,571 finally cost $111,216.

William M. Spann, Kansas City consulting engineer, testified that the commission was responsible for an overabundance of political roads. Location of construction was haphazard and totally unintegrated. Efficient maintenance was the exception. Materials were untested before purchase.

He cited 14 mi of substandard width blacktopping that cost $501,748—more than $25,000 per mi—took 18 months for the state force to complete on Highway 40 near Osceola.

• How much is it worth to whom?—Of particular interest to HAC investigators were a number of transactions involving acquisition of land for right-of-way for new work on U. S. highways 64 and 71, between Van Buren and Alma.

In testimony by Highway Commission Chairman J. B. Lambert; Right-of-Way Engineer F. C. Bogart; J. Neal, a Crawford County farmer, and others, the commission got these facts:

A. E. JOHNSON, chief engineer for the highway department, protested.

The state had paid near top prices for right-of-way land—close to an average of $1,000 an acre; that appraisers had themselves entered into negotiations over the land; that no account was taken by the appraisers of assessed valuations of the land. Most surprising was the fact that Mr. Neal—who had acted as one of a group of three appraisers—was himself a landowner whose land was involved in the right-of-way transactions.

In all, the investigators found that a total of 128 acres had involved state funds of more than $300,000 for land acquisition and adjustments, although one state appraiser had estimated that land costs might be $160,000.

• Spoils system—In other testimony, a number of witnesses cited generally low pay of highway employees; and a political spoils systems as other reasons for irregularities and waste in conduct of the department's affairs.

The witnesses pointed to the fact that the department's personnel director (Dennison Yates) had never been informed as to the extent of his duties and in fact had never been called upon to hire personnel other than some machine operators; to the fact that district superintendents and job bosses were unable to hire or fire employees excepting in emergencies.

Others testified that the department loses "tremendous amounts of efficiency because of heavy personnel changes with each new gubernatorial administration; that the state's retirement system covers only about a third of the employees.

Reserve of metals distributed by DPA

The Defense Production Administration last week announced the distribution of controlled materials that it had temporarily held in reserve for the second quarter of 1952.

Largest single increase—119,000 tons of steel—went to the Office of International Trade, Economic Cooperation Administration. Another healthy chunk—39,000 tons of steel—went to the Canadian Division.

Other important increases included: 40,000 tons of steel and 230,000 lb of copper for railroad equipment; 28,800 tons of steel and 2,000,000 lb of copper for industrial expansion; 100,000 tons of steel, 9,000 lb of copper, and 500,000 lb of aluminum for the building materials division of the National Production Authority; 75,000 lb of aluminum for the construction machinery division.

Important downward revisions disclosed were: Department of Defense, minus 9,600,000 lb of copper, and minus 12,400,000 lb of aluminum; Bureau of Public Roads, minus 2,200 tons of steel, and minus 17,000 lb of copper.

Power fight goes to Supreme Court

A Supreme Court test, with far-reaching implications, is shaping up between Secretary of Interior Chapman and the Virginia Electric and Power Co. At issue is whether VEPCO or the federal government has the right to build a hydroelectric plant at Roanoke Rapids, N. C.

A previous decision by the Fourth District Circuit Court backed the Federal Power Commission, which had favored VEPCO. Chapman is appealing without approval of Attorney General McGrath.

VEPCO has already begun construction of the plant and in spite of the coming court test has no plans to discontinue work.

• Other power developments—Florida Power and Light Co. has announced a $332-million plant expansion program covering the next ten years to keep pace with Florida's fast growing population. . . . The Defense Production Administration has announced approval of electric power expansion projects totalling $153-million in Manhattan, Queens and Brooklyn, N. Y., for the Consolidated Edison Co. of New York. . . . The legality of the Tacoma, Wash., proposed $146-million hydroelectric project is at stake in a suit initiated by the city itself to clear up its legality.

Expansion of Engineers' Joint Council proposed by professional unity group

Modification of Engineers' Joint Council to permit inclusion of a majority of the engineering societies of this country has been recommended to those societies by a large majority of the "Exploratory Group to Consider the Increased Unity of the Engineering Profession."

This step is recommended in a report now being sent by the Exploratory Group to the boards of the 16 societies that participated in the study. Thirteen societies were represented at the meeting at which the report was adopted. All voted in favor of the proposed step except Alex Van Praag, Jr., representative of the National Society of Professional Engineers.

In a minority report, Mr. Van Praag urged that "no specific plan be fostered until first there shall be further discussions and education of the profession, and second a polled expression of opinion from members of the profession on which to base further implementation of the unity organization." The majority report has the effect of fostering Plan A, one of the four plans that the Exploratory Group presented to the profession for discussion last year (ENR June 14, 1951, p 28).

• **Study begun in 1949**—The Exploratory Group was formed in June, 1949, on invitation from Engineers' Joint Council and has been studying greater unity actively since that time. At a meeting held late in December of last year the majority concluded that, in view of the differences of opinion within the profession that were brought out by discussion of the four plans, "it is desirable that the unity organization be launched in the simplest possible way and that these questions be studied and determined by the unity organization itself rather than by the Exploratory Group or any other temporary group."

• **First step toward unity**—To bring about this first step, representatives of 12 of the 13 organizations represented at the December meeting recommended that Engineers' Joint Council invite all the societies that participated in the study to become constituent societies of EJC. This will require modifying the membership provisions of the constitution of EJC.

At present EJC is made up of the two most recent past presidents and the secretary of the American Society of Civil Engineers, American Institute of Mining & Metallurgical Engineers, American Society of Mechanical Engineers, American Institute of Electrical Engineers and the American Institute of Chemical Engineers. Presidents of those societies are ex-officio members of the council.

Under the amended constitution of EJC, the council would be made up of one representative for each 10,000 members in each of the constituent societies, but no society would have more than three such representatives. The representation that this would give the participating societies at the present time is shown in the accompanying table.

• **Objectives expanded**—At the present time the objectives of EJC relate chiefly to promoting greater cooperation among engineers on matters relating to national policies of direct concern to engineers as distinguished from purely professional subjects, which are handled by the Engineers Council for Professional Development. The Exploratory Group recommends that consideration be given to making ECPD a division of the proposed unity organization. This would give the organization a more direct interest in such professional matters as greater recognition for the engineering profession, maintenance of high professional standards, improvement of engineering education and post-college training for young engineers.

Another new objective would be to correlate the activities of regional, state and local engineering organizations and the work of student chapters of the major engineering societies.

• **Membership**—One of the chief questions that remains unanswered as a result of the Exploratory Group discussion is that of membership in the unity organization. At present, EJC has no individual members, but it is considered as representing all the members of the five sponsoring societies. However, there is widespread belief that some form of individual membership would stimulate much greater interest in the activities of the unity organization.

The Exploratory Group recommends that consideration be given to three types of individual membership in the unity organization: (1) Automatic membership for all members of the constituent societies; (2) voluntary membership, possibly limited to certain grades of membership in the constituent societies such as all voting members; and (3) voluntary membership limited to the grades of membership in the sponsoring societies requiring a high degree of professional competence.

• **Relations with NSPE**—The National Society of Professional Engineers was launched initially by a few state societies of professional engineers as the unity organization for the profession. It now has a membership of 24,000 as against 133,000 in the societies now in Engineers' Joint Council. Plan D of the four put forward by the Exploratory Group last year was built around NSPE. Under that plan, membership would be limited to registered professional engineers.

In the initial step now recommended by the Exploratory Group—with NSPE dissenting—the door is left open for NSPE to be admitted to EJC on the same footing as the other societies. The group goes on to recommend that "careful study be given to the relationship between the activities of NSPE and those of EJC as a whole with a view to working out the most harmonious and effective relationship."

Organization	Voting Members	Number of Representatives on EJC Council
American Association of Engineers	6,078	1
American Institute of Chemical Engineers	4,031	1
American Institute of Electrical Engineers	41,893	3
American Institute of Mining and Metallurgical Engineers	17,234	2
The American Society for Engineering Education	7,500	1
American Society of Civil Engineers	32,901	3
American Society of Heating and Ventilating Engineers	5,858	1
American Society of Mechanical Engineers	37,000	3
American Society of Refrigerating Engineers	4,720	1
American Water Works Association	8,400	1
Illuminating Engineering Society	7,166	1
Institute of Aeronautical Sciences	4,379	1
Institute of Radio Engineers	8,231	1
National Society of Professional Engineers	24,213	3
The Society of Naval Architects and Marine Engineers	5,420	1
Total	215,024	24

COAL BRIDGE BUCKLES—Collapse of this coal bridge, largest of its type ever built by American Bridge Co., is being investigated by engineers at U. S. Steel's Clairton (Pa.) coke works. One crane operator was killed and another injured, when the 400-ft wide structure went down during a snowstorm. (Wide World photo.)

Coal bridge span collapses

By Bill Smock
Staff Correspondent

Engineers for American Bridge Co. predict that high winds may prove to have been a factor in the collapse of a 2,200-ton coal handling bridge at the Clairton by-products plant of U. S. Steel Co., Monday, Feb. 11.

The collapse killed one of the two crane operators working on the bridge and injured the second.

Emphasizing that investigation of the accident is far from complete, engineers pointed out winds of up to 85 miles an hour were recorded in the Pittsburgh area during a storm three days before the collapse. They also said the collapse occurred during a swirling snow storm which was accompanied by gusts of wind.

The engineers don't fix the wind as the cause of the tragedy. They say the cause can't be determined until all angles of the still continuing investigation are covered.

In bridges of this type, the rivets have been known to work loose, and joints to fail because of changes in stress. So there has been a trend toward replacing rivets with high-tensile strength bolts. In that type of joint, the components are held by friction, rather than by shear and bearing. To date, the bolted joints seem to hold tight, where riveted joints have failed.

• **Bridge described**—The bridge was used to unload coal from barges tied up alongside in the Monongahela. The two cranes on the span filled five-ton buckets from the barges and then dropped the coal on to a coal pile beneath the bridge. The coal pile has a capacity of 300,000 tons.

The main part of the bridge consisted of a 400-foot long span, plus two cantilevers each 100 ft in length which extended out in each direction, making a 600-ft overall length.

The bridge travelled on rails back and forth the length of the coal pile. The two cranes rode on trolley rails which were 60 ft above the bridge rails. The top of the bridge framework towered 112 ft above the bridge rails.

United States Steel Co., which operates the by-products coke plant at Clairton, says the bridge cost $500,000 when it was constructed some time between June of 1919 and June of 1921. The records don't show the exact date it was completed.

All told, the steel and auxiliary equipment weighed 4,404,066 pounds. U. S. Steel spokesmen refused to estimate what it will cost to replace the span and declared the company has not decided whether to repair the bridge, build a new one or resort to other methods of unloading and storing the coal brought down the river from nearby mines.

• **Was largest**—The Clairton bridge was the largest material handling span ever built by the American Bridge Co., another U. S. Steel Co. subsidiary. It may have been the largest material handling bridge in the world.

The massive structure caved in at the middle without warning. The two men in the crane cabs found themselves sliding down toward the middle as the span gave way. They were hurtled about 50 feet on to the gigantic coal pile and their cabs were crumpled as the mass of steel fell on them with a roar which could be heard a half-mile away.

Crane operator Austin McCall, 50, of Clairton, was killed instantly. Operator Paul Usko, 45, of nearby Glassport, survived.

Work done by the rescue parties slowed the investigation. Some officials expressed concern that the extensive use of acetylene torches may have obscured some clues. Another factor slowing the probe is that many of the beam ends are buried deep in the coal pile and can't be reached until all the wreckage is cleared away.

U. S. Steel spokesmen said the bridge had operated without mishap until it collapsed. They declared the span was inspected daily by plant men and periodically by the American Bridge Co.

Bridge builder awarded $131,386 by claims court

A. E. Ottaviano, Inc., contractor who built the substructure of the Peekskill-Annsville Bridge was awarded $131,386 in claims last week against the State of New York because state engineers misrepresented conditions at Annsville creek and delayed the project.

The bridge, completed two years ago, took over two years to build—twice as long as the schedule under the contract. After a 21-day trial, the Court of Claims ruled that State engineers withheld from Ottaviano the fact that the subsurface of the creek bed at the north bank of the bridge site consisted of free flowing mud and silt.

When Ottaviano tried to fill it in with dirt and rocks, the fill sank out of sight. It went 58 ft below and sent out a mud wave that impeded construction of piers for the rest of the span. State engineers then delayed the project while they sought a remedy.

Water policy commission discloses its draft of water policy legislation

Copies of the legislative bill that was submitted to President Truman a year ago by his Water Resources Policy Commission have been released by Morris L. Cooke, chairman of the commission, with the President's approval.

No legislation embodying the commission's recommendations has yet been sent to Congress by President Truman, but he advised Congress in his recent budget message that the commission's recommendations "have been under intensive study during the past year by representatives of the Executive Office and interested agencies."

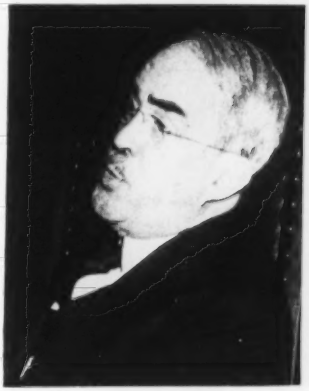
When the commission sent this draft to the President last February the President did not make public the details of the bill as had been expected in view of the stress he had laid on the need for early adoption of a federal water-resources policy.

That led to a conclusion that the President was not in sympathy with some of the commission's recommendations and hoped that legislation more to his liking could be evolved in the Executive Office while going through the form of studying the commission's recommendations.

Whether this deduction is correct will not be known until the legislation now being drafted by the Executive Office goes to Congress. Support for it, however, is found in Mr. Cooke's statement that the commission's proposed "Water Resources Act" was being given out at this time "in accordance with the considered judgment of all members who served on the President's Water Resources Policy Commission."

• **Few surprises in bill**—There are no major departures in the bill from the recommendations made by the commission in the report it sent to the President in December 1950 (ENR Dec. 21, p. 23). If anything, the powers of the river basin commission that it proposes would be more limited than its report indicated. Their main purpose is "to plan and coordinate all federal participation in resource development." They are not given power to build or operate any project. All they do beyond the planning is determine what federal agency will undertake the work after a project has been authorized by Congress.

It is in this area that the commission's recommendations are believed to be out of harmony with the President's thinking. He has frequently stated that he favors river basin authorities similar to the Tennessee Valley Authority.



MORRIS COOKE, chairman of the President's Water Resources Policy Commission.

• **River basin commissions**—Each river basin commission is to consist of nine members, one each from the Corps of Engineers and the Departments of Interior, Agriculture and Commerce, one each from the Federal Power Commission and the Public Health Service. Two are to be elected by a local advisory committee in each river basin. The chairman is to be appointed by the President from among the residents of the basin.

• **Local cooperation sought**—This provision assures that the three members who are not federal employees all come from the river basin itself. Also, each commission is required to "seek the advice, assistance and cooperation of the people residing within its territorial jurisdiction and of their state and local agencies." In addition, there is to be a 25-member advisory committee to be named by the governors of the states lying in whole or in part within each river basin.

• **Board of Review**—The act also calls for setting up a Federal Board of Review in the Executive Office consisting of five members appointed by the President with the advice and consent of the Senate. It is to have broad veto powers over all federal participation in river development, such as was proposed by the Hoover Commission on reorganization of the federal government.

NEWS BRIEFS

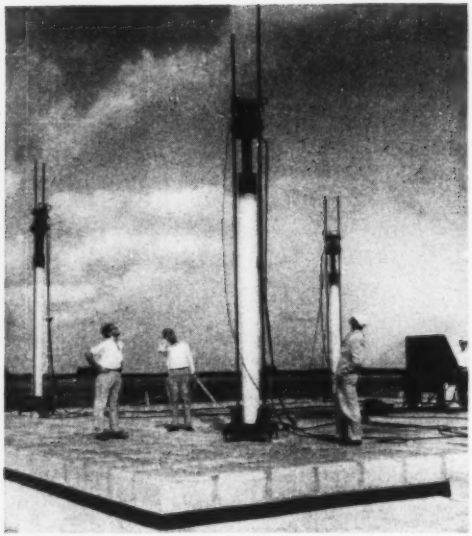
• **More schools**—The Federal Security Agency says it will start 1,500 new projects in the second quarter, in addition to the more than 2,000 projects now under construction. The increase from Defense Production Authority estimates of 500 starts is being accomplished through use of metal conservation and redesign of school structures.

• **Still trying**—The New England Steel Development Corp. last week got a six-months extension from the National Production Authority to get its proposed $228-million steel plant in the New London area of Connecticut started under rapid amortization provisions.

• **Taconite project**—Erie Mining Co. has announced plans for construction of a $300-million project on the Mesabi iron range in Minnesota for producing up to 10.5 million tons of taconite annually. The program includes an ore concentration plant, a new community for employees and their families, a power plant, a new railroad to carry pelletized ore from the plants to loading facilities.

• **Long delayed**—Construction of a commercial explosives plant by E. I. du Pont de Nemours & Co. near Martinsburg, W. Va., is under way after a delay of nearly six months because of the lack of critical materials. It will consist of 50 buildings spread over 400 acres of the 1,200-acre tract along the Potomac River.

• **Highway activities**—A six-year $616-million highway building program to construction or modernize 350 miles of New Jersey highways was proposed to the State Legislature last week by Highway Commissioner Ransford J. Abbott. . . . Ohio accuses Pennsylvania of breaking an agreement over distribution of truck traffic at the western end of the Pennsylvania Turnpike. . . . The Colorado legislature adjourned its 1952 session without passing ten of the twelve bills making up the state's $1-billion 20-year highway program. The program drew heavy opposition because of proposed increases in gasoline and truck taxes. . . . Bills to authorize the Public Roads Commission to start planning and construction, subject to availability of funds, for a Mississippi River Parkway from Minnesota to the Gulf of Mexico have been introduced in Congress.



METHOD Hollow concrete blocks are set on the first-floor slab and reinforcing steel is placed between them in both directions. Next, concrete is cast between the blocks, embedding the bars and steel collars around the columns.

Concrete block laid on floor slab

ROOF SLABS for factory buildings in a Florida development of Atlas Terminals Corp. are being formed on the ground and lifted into place in 50-ft square sections weighing 175,000 lb apiece.

While this type of construction has been used before, this represents the first use of hollow concrete blocks in the slab, to reduce the weight. In the Youtz-Slick application for Trinity University at San Antonio, Texas, the slabs lifted were solid flat plates, 8 or 9 in. thick (ENR June 29, 1950, p. 38). For the hangars at Marignane, France—Marseilles airport—La Societe des Entreprises Boussiron, of Paris, jacked up complete thin-shell barrel-arch roofs from the ground to the tops of 63-ft high columns. (A description of this technique will be published in a subsequent issue.) Model studies have demonstrated the feasibility of prestressing the slab to reduce the weight to be lifted and cut steel requirements, but to date no full-size application has been made with this technique.

Even without resorting to prestressing, however, designers of the Florida building were able to hold down the amount of reinforcing steel to only 1.82 psf. They did this by basing the design on model analysis, instead of computations based on conventional formulas. Application of the usual method of design would have resulted in use of about 4 psf, the designers claim.

• **Technique to be repeated**—Savings achieved by this method will be multiplied many times; the building is the first of 40 that Atlas Terminals Corp. plans to erect on an 80-acre tract at Ojus, 8 miles north of Miami.

Before starting this development, Atlas, which operates 3,000,000 sq ft of warehouse and industrial terminal space in the New York City area, made a year's study to determine a suitable location for new buildings in its expansion program. It decided upon the Florida site on noting a trend of northern manufacturers to move their main plants to the South or establish branches there.

The tract is served by multiple transportation facilities. It fronts on U. S. Highway 1, main north-south route on the East coast; has a spur of the Florida East Coast Railway and is split by an 8-ft deep salt-water channel leading to the Intracoastal Waterway.

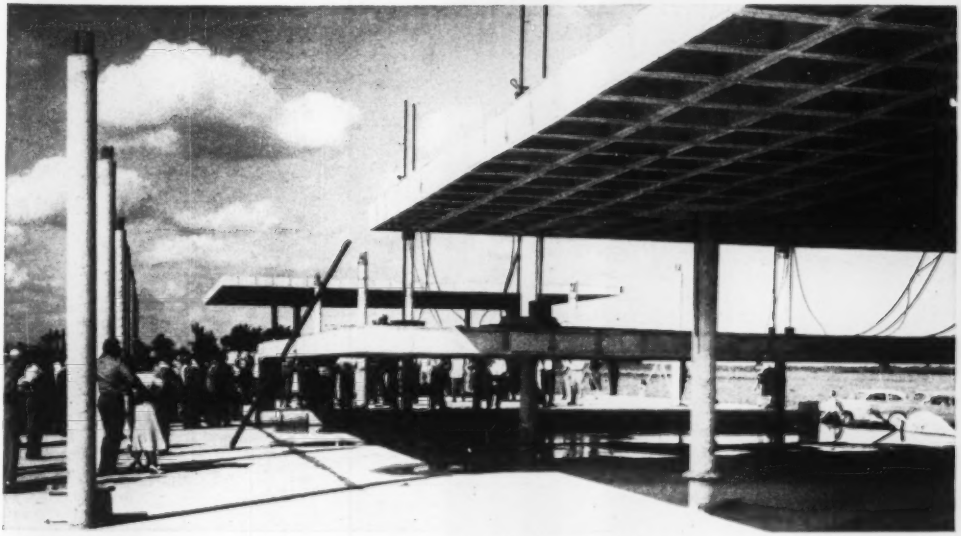
The building now under construction has been leased to Copco Steel and Engineering Co., general fabricators, Detroit, Mich. It is one story high, 100 x 200 ft in plan, with 14-ft ceiling height.

• **Cardboard column forms**—Walls are composed of precast concrete panels. They are supported on grade beams, which rest on precast concrete piles.

The roof consists of eight 50-ft square concrete slabs, each of which is supported on four reinforced concrete columns. These, in turn, rest on a group of three 10-in. square precast-concrete piles.

Ten inches in diameter, the columns were cast in cardboard forms. A metal

MATERIAL— Blocks are 2 ft square, weigh 130 lb, have 5,000-psi strength. They were developed by Laurence G. Farrant (above).



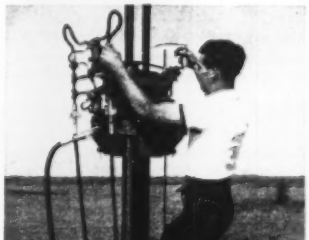
SLABS, 50 ft square, thus formed, are lifted up with jacks supported on top of the concrete columns and operating screws attached to lifting yokes. At roof level, the slab collars are welded to column caps, anchoring the slab.

jacked up on columns to form roof

pipe collar at the top provides a means for attaching the roof slab.

Columns are spaced 20 or 30 ft apart. Under each slab section, they are 30 ft on centers. Thus, the slabs cantilever 10 ft beyond the columns on all four sides.

• **New block**—The slabs are composed of concrete-pan blocks, developed by Laurence G. Farrant, structural engineer of Miami, Fla., with the assistance of his associate, Walter Harry. Made of 5,000-psi concrete, the blocks are 13 in. deep and 2 ft square, out to out. Thickness varies from 1 to 1½ in. Weight is about 130 lb.



MACHINE— Screw jack is hydraulically operated from remote-control panel, so that the slab is lifted uniformly by all four jacks.

To form the roof slab, the blocks were laid on the building's concrete floor slab with the hollow side down and with the projecting 2-in. long, bottom flanges of adjoining units touching.

The building's floor was soaped to prevent the blocks from sticking. (At this stage, the slab looks so much like a waffle that Mr. Farrant calls the units "waffle" blocks.)

Reinforcing bars, as determined by mirrored-model analysis by the Presan Corp., of Los Angeles, were placed between the blocks. Then the spaces between the blocks were filled with concrete, embedding the bars.

At the same time, a solid 4-ft square slab of concrete was formed around each column. Incorporated in it were four 1¼-in. dia screw anchors for lifting and a metal collar for attaching the slab to the column caps. A lifting yoke made of four pairs of steel channels was attached later to the screw anchors.

It should be noted that the sides of the waffle block taper in. Thus, when the cast-in-place concrete sets, the blocks are firmly wedged in place by the concrete.

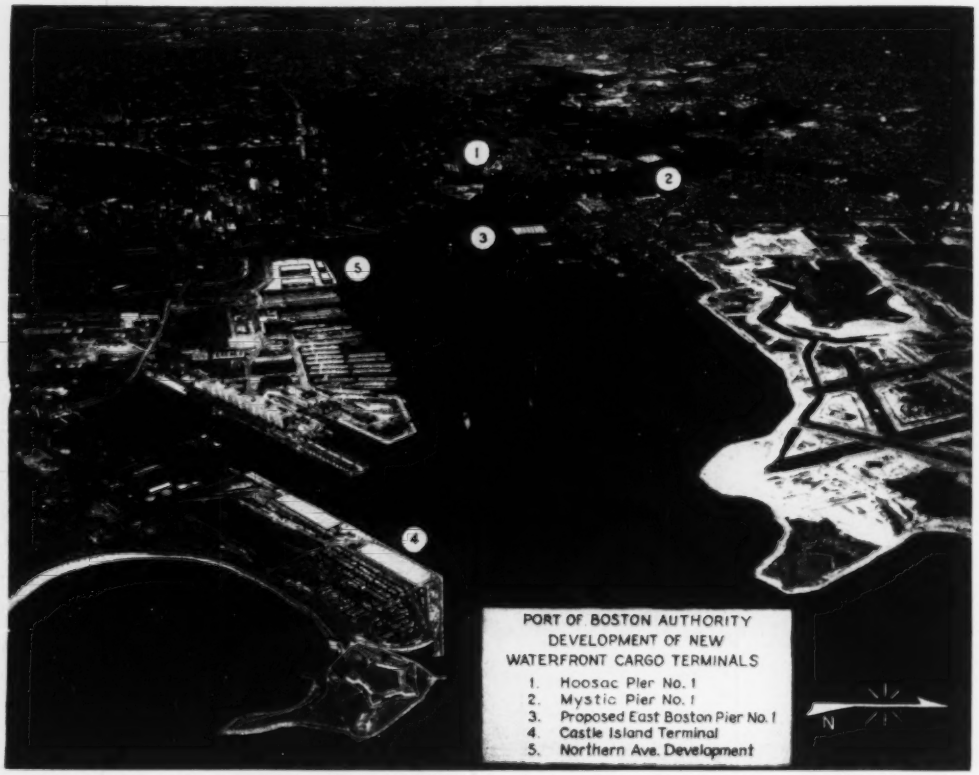
Very little of the poured concrete leaks through to the floor, so there is no problem in breaking the slab loose for lifting.

• **How slab was raised**—The technique for erecting the roof, known as the Youtz-Slick method, was developed by the Institute of Inventive Research, San Antonio, Texas. A hydraulically operated jack was placed on top of a temporary 5-in. dia steel pipe on each column. Controlled from a central panel set up on the roof slab, the jack turned two screws that were threaded through a nut on the underside of the lifting yoke, pulling the slab up. The central control assured uniform movement at all four columns. Lifting rate was 2½ ft per hour.

When the slab was at the proper elevation, it was anchored in place by welding the metal collar at each column to the metal column cap.

The waffle-block slab was designed by Farrant and Harry. Blocks for the job were manufactured by the Livesay Window Co., of Miami, Fla. Morris Burk is the general contractor. John V. Baptise, the owner's operating vice president, is supervising the start of the terminal for Atlas.

The Youtz-Slick method can also be used for buildings two or more stories high.



A GREAT NATURAL HARBOR has long been the basis of the prosperity of Boston. Spotted on this aerial view are the jobs being done to keep the port up to date.

Port of Boston gets a face-lifting

George L. Wey
Chief Engineer
Port of Boston Authority
Boston, Mass.

THRIFTILY BUT EFFICIENTLY—as befits New England—the Commonwealth of Massachusetts is hard at work modernizing facilities of its key port of Boston, to handle increased waterborne cargoes, and maintain the port's position as one of the top sea terminals of the United States.

For a total cost now estimated at about $35,000,000, the port will get three new piers to replace obsolete ones that happened to be located in strategic areas; a new terminal wharf, and a new concrete apron for shoreside loading.

The projects completed to date, say engineers, are among the most economical built anywhere.

Hoosac Pier, covering an area of about 260,000 sq ft and with a single-story transit shed of 200,000 sq ft, was built at a cost of about $12.50 per sq ft. Mystic Pier, with a pier area of 420,000 sq ft and a shed of 246,000 sq ft will be completed at a cost of about $9.60 per sq ft.

• **Need**—It was in 1945 that the Commonwealth of Massachusetts established the Port of Boston Authority and authorized it to prepare a master plan for modernizing existing waterfront terminals. (The last commercial waterfront terminal to be constructed was built in 1912, when Commonwealth Pier No. 5 was completed.)

The authority's study indicated the initial need to reconstruct obsolete and inefficient facilities, rather than construction of additional ones on new sites. Some of these now-obsolete piers were strategically located for maximum efficiency in the interchange of water-borne cargo to rail and highway transportation, easily accessible to labor and in protected waters.

• **New work**—The initial master plan, presented in 1947, therefore, consisted of four major reconstruction projects.

These projects, in their priority sequence, are:

Reconstruction of the former Hoosac Piers and Mystic Piers No. 46 and 47 in Charlestown and Commonwealth Pier No. 1 in East Boston; further improvements of the Castle Island Terminal; and development of the unused waterfront along Northern Ave. in South Boston.

• **Planning to cut costs**—In planning these piers, stress was placed on the economic aspects of functional lay-

out, and on design and construction consistent with efficiency and durability.

Since the enabling legislation under which the authority acts requires amortization of the construction cost at the rate of 3% a year by private operators, the economic side of each project is a major consideration. So there is nothing ornamental or monumental in the design. And while the new facilities generally have a lesser number of ship berths than the ones being replaced the increased efficiency of layout will not only permit greater capacity of the interchange process, but also will enable a larger number of ships to be accommodated per year.

In layout, all the new terminals follow a basic pattern: single-story transit sheds; rail tracks on aprons for the direct movement of heavy cargo between ship and rail; adequate natural lighting for good daylight operation and artificial lighting for night operation in transit shed; depressed tracks in the shed for platform-height loading and unloading; truck loading platforms; ramps for vehicular entrance into shed; offices for all interests pertinent to terminal operation; warm rooms for cargo, and an entire structure of incombustible materials.

• **Substructure**—Types of substructure of the various piers in the master plan are all different, as the result of economic studies.

After soil exploration tests are taken, about four applicable substructure types are developed in a preliminary way to permit a conclusive economic study. Then the most economical scheme is seleted for development into contract plans and specifications.

• **Mystic Pier**—An example of the careful work that goes into these projects is the Mystic Pier.

Because of the existing extremely thick underlying stratum of soft blue clay, the earth mole of the old pier was found to be too sensitive to support the much greater loads to be imposed by the new structure.

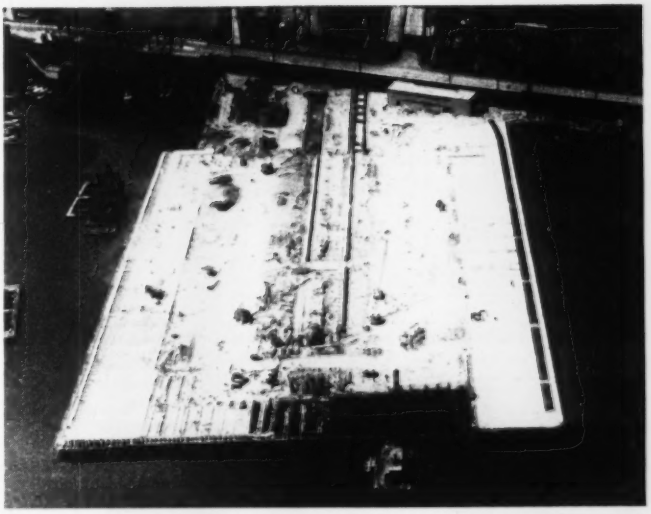
To eliminate differential settlement in the wharf building and cut down on the surcharge on the banks of the mole, it was found advisable to drive the piles to rock—a distance of about 160 ft. In addition, 15,000 cu yd of local low-cost lightweight aggregate was placed to raise the floor of the mole area about 3 ft.

A steel sheetpile bulkhead was constructed about 50 ft inshore, and the bank was sloped and covered with riprap from the masonry seawall that had originally surrounded the mole.

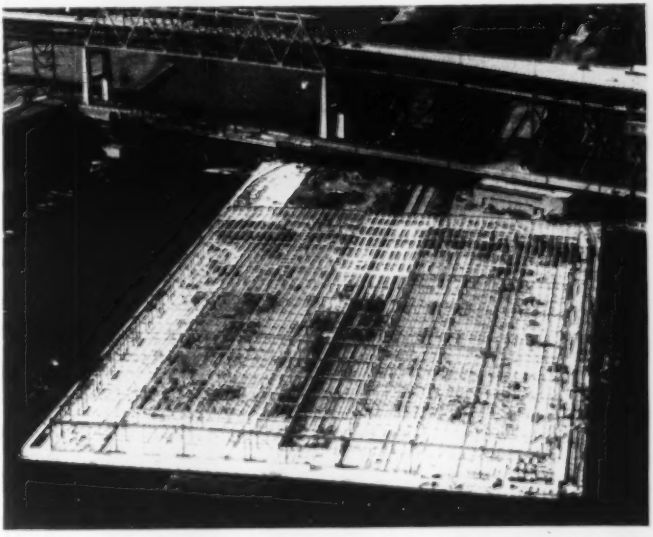
The transit shed on this pier has three tracks running down the center in a depressed "well" for flush-loading of rail cars. For efficient movement of cargo throughout the shed, a roadway is provided around the outboard end of the trackwell and a hydraulic-lift trackwell bridge provides two-way traffic for handling of cargo by mechanized equipment.

• **Fire Protection**—Three systems are provided for fire protection:

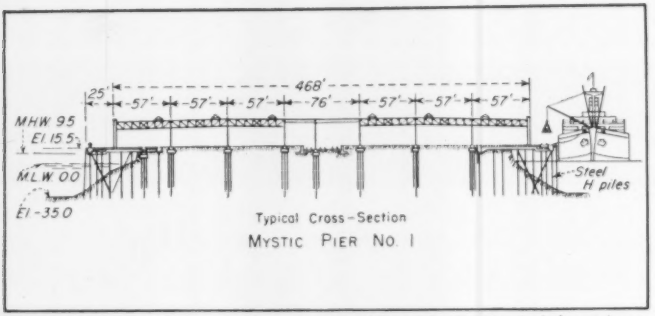
(1) Manually-operated stations, located throughout the pier and specially distinguished to permit quick location in an emergency, are connected to the city fire department alarm system. (2) A central supervisory fire alarm is connected to the sprinkler system. (3) Pre-action type of sprinkler system covers every part



IN GO THE PILES on rebuilt Mystic Pier No. 1. Old earth mole which supported two older piers has been levelled and filled to new grade, final piles are being driven for concrete apron.



UP GOES THE SHED for Mystic No. 1—a light steel one-story framing, to be covered by light roofing and siding. Offices will be at landward side of shed. Small building upper right will house pier service facilities.



DETAILS of the fast, economical construction of Boston's new piers include maximum use of existing foundation, steel H-piles to support deck and railroad tracks, center well for railroad trackage.

of the transit cargo shed and offices.

• **Construction problems**—Progress has been especially noteworthy, considering the handicaps of material procurement.

The contractor, Merritt-Chapman & Scott Corp. of New York City, started to drive the first test piles in Dec. 1950; about 25% were test loaded and the rest were used to determine the scheduling of pile lengths. Within eight months, about 370,000 ft of timber and steel piles were driven, despite the discovery of many underground obstructions that had to be avoided.

Concreting—about 12,500 cu yd—was confined primarily to night work to avoid heavy daytime vehicular traffic in the Charlestown area. Using mixed-in-transit concrete, the contractor achieved a rate of placement as high as 130 cu yd per hour in the wharf aprons. The largest single pour was about 1,100 cu yd.

The structural steel frame of the building was erected and finish painted in a semi-gloss white in advance of erection of a precast concrete roof and corrugated exterior siding.

This white interior is a departure from usual practice and is another of the items reflecting study of the economic aspects. Lighting of the aprons is designed to eliminate breaking of fixtures and blinding glare on the longshoremen working the ship. At little more cost than the ordinary lighted warehouses, the Mystic Pier will have an artificial lighting system that makes it possible to read the labels on cargo easily from good working distances.

The terminal has been leased and will be operated by the Boston and Maine Railroad. Thomas Worcester, Inc., was consulting engineer.

• **Other steps**—Two minor steps in the master plan were completed this year—modernization of the port's grain-handling facilities was effected at the East Boston Terminal and at the Hoosac Pier.

Existing facilities had a ship-loading capacity of about 10,000 bushels of grain per hour—too little for the port to maintain its competitive position. The study indicated that the present 1,000,000-bu elevator was adequate for storage, but the ship-loading conveyor system should be increased to 30,000 bu per hour, and provision should be made to load grain at five points on a ship simultaneously.

This plan was put into effect, and in addition, mechanical bagging arrangements, better communication and equipment controls, and power-driven remote-control winches for shiploading spouts were provided throughout.

The next part of the Master Plan to be taken in hand will be the East Boston Pier No. 1, to be leased and operated by the New York Central System. The contract plans are complete, and it is contemplated that bids will be received this spring, if materials are available. Consulting engineer on this job is Fay, Spofford, and Thorndike of Boston.

• **More for the future**—In the summer of 1952, also, it is proposed to begin modernization of Castle Island Terminal by altering and improving existing facilities.

The latest project proposed and currently in the design stage is the Northern Avenue Waterfront Development. This will consist of one marine passenger terminal, three general cargo facilities, an international trade center, and a supporting auto parking lot that will handle 800 cars at one time. As planned, the terminal will be of functional layout and design, incorporating the union-terminal principles into this type of facility. This project is expected to cost about $15,000,000.

Floating slab found suitable for houses

C. W. Smith, director of the Housing Research Foundation of Southwest Research Institute, reports that deep foundations under the perimeter of houses may be on the way out. This is indicated by the results of an 18-months study of concrete floor slabs on unstable soils made for the Division of Housing Research of the Housing and Home Finance Agency.

Findings of this research indicate that perimeter foundations or grade beams contribute little strength or stiffness to structural floor slabs laid on grade. Instead, the strength increases in geometric proportion with the center depth of the slab. This is a complete reversal of traditional design and may point the way to an entirely new design concept.

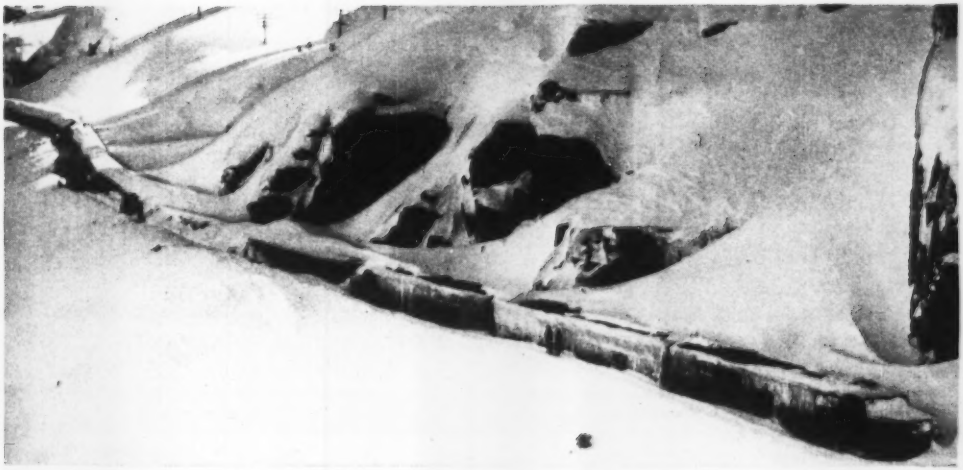
In certain areas of the country, notably in the Southwest, and particularly in the San Antonio, Tex., area, extremely active soils are found, due to the presence of bentonite and montmorillonite. These soils are subject to variations in volume because of extremes of moisture and dryness. Load-bearing perimeter foundations or piers extending into such soils are frequently broken by localized horizontal forces that cannot be resisted by any practical amount of reinforcing steel. Efforts have long been made to fight these forces with reinforced beams and piers without success.

On the other hand, a floating slab offers no resistance to the soil's horizontal movement and can be reinforced economically against unevenly distributed vertical movement.

• **Inverted pyramid design**—After many models of slab designs were built and tested, the researchers found that a slab of inverted pyramid design yielded the greatest strength and greatest stiffness for the same estimated cost as the usual FHA design. For a 24x36-ft slab, the inverted pyramid slab has a depth of 24 in. at the center and 4 in. around the perimeter. One-half inch steel bars were placed 12 in. on center both ways top and bottom in this slab.

Since the model slabs of all designs showed the greatest weakness in the position of diagonal corner support, it was found that placing the steel diagonally in the slabs instead of parallel with the sides, greatly increased the strength and stiffness at no increase in cost.

Almost as good as the inverted pyramid is the perfectly flat slab, with the same amount of steel (all ½-in. rods uniformly spaced 12 in. on centers diagonally top and bottom).



Snowbound train passengers rescued by . . .

. . . road plows directed by radio

DRAMATIC RESCUES in the deep snows of California's high Sierra—made possible by the radio system operated for highway maintenance purposes by the State Division of Highways—reached a new high in the mid-January freeing of more than 200 passengers and crewmen stranded for several days on Southern Pacific's crack streamliner, the City of San Francisco.

The situation was such that rail-mounted snow removal equipment could not reach the train in less than 2 or more days. A rescue train was brought to within 4 miles of the stranded streamliner but there its further progress was hopelessly blocked. U. S. Highway 40 closely paralleling the tracks for these 4 miles offered a way out but it, too, was snowclogged. Moreover the one rotary snow plow available for clearing this stretch had developed windshield wiper trouble that under normal circumstances would have made the unit inoperative.

That's where the radio system came in. The snow plow had one of the state's 450 mobile radio units in it. Also available was a foreman's pickup truck with a similar unit. So to clear the road, the plow operated with radio guidance coming from the foreman traveling behind in his pickup. Intimate knowledge by the foreman of details of this mountain stretch made this blind driving of the slow-moving snow-clearing vehicle possible. Almost 20 hours of such pickup to snow-plow communication was necessary to clear the road and permit rescue of the train's occupants.

Another equally impressive but less publicized rescue involved a highway maintenance worker whose pickup truck was completely buried by an avalanche. After several minutes of terrorized worry, the man discovered that the radio still operated. He used it to inform rescuers of his plight and guide them to his truck. This

FROM FIELD CREW . . .

TO MAINTENANCE STATION . . .

TO HEADQUARTERS

Foreman C. H. Willett from a truck on U. S. 50 near Echo Summit reports to Radio Technician Charles W. Cissel at the Donner Summit maintenance base. The road report in turn is relayed to state headquarters where it is received by Dispatcher-Clerk Dorothy Williams while Communications Supervisor Arnold H. Carver plots conditions on a statewide map.

saved at least one hour in the rescue and perhaps the man's life.

• **Long-time development**—Radio has been used in connection with highway emergency work in California for almost 15 years. However, it has only been in recent years that a system exclusively for highway maintenance purposes has been installed. Detailed studies were started in 1946 and first equipment for the new system purchased in 1948. About that time the Federal Communications Commission authorized wave lengths exclusively for "highway maintenance" purposes. In 1949 a 5-year program of complete statewide development was started. This has since been sped up to 3 years so that by the end of 1952 the system—now more than 75% complete—will be fully completed.

• **FM system**—A frequency modulation system was selected because it will function in all sorts of weather. But its beams travel in straight lines. This makes necessary installation of a system of booster stations.

The completed system will include 450 mobile field units, 80 base stations, 29 fixed relay towers and 25 control stations. All of this equipment is now installed and in use except for twelve control stations, ten base stations and nine fixed relay stations.

The 450 mobile units, all having 60-watt power, are mounted in supervisors' cars, foremen's trucks and pickups, specialized snow equipment, engineer personnel vehicles, specialized traffic signal cars, traveling mechanics' cars, and planning survey vehicles. Although the snow-clearing operations provide the most dramatic examples of employment of the system, less than 5% of the mobile units are installed in equipment that is restricted to snow-clearing use.

Except for the rotary snow plows or other machines that have a 12-volt system, no special batteries or generators are needed to operate the mobile units. For the rotary snow plows a special 6-volt system including a generator is installed to operate the radio.

• **Base units are important**—Heart of the system are the 80 base stations that operate with either 60-watt or 250-watt transmitters. These units communicate directly with the 450 mobile field units. Throughout the state all communication between base station and mobile unit is on the same frequency. This means that any one base station can communicate directly with only one mobile unit at any one time although other mobile units can listen in on the conversation. The power of the station is restricted so that they operate only in a limited area and thus minimize interference with other units.

Under most circumstances the mobile units use the same frequency to report back into the base station. However, when the units go beyond their range, they can keep contact with the base station by changing to a second frequency. Messages transmitted on this frequency are picked up by automatically operated, 60-watt fixed relay stations and retransmitted.

Base stations are operated in highway district headquarters and maintenance stations throughout the state. In some instances these maintenance yards are in suppressed or low locations.

• **Personnel needed**—Almost all of the field equipment is operated by regular maintenance personnel. In each district office and at state headquarters in Sacramento a trained dispatcher-clerk has been added to the staff. In addition, each of the eleven California highway districts has assigned to it a radio-telephone technician for maintenance repair of the units. At Sacramento headquarters two supervising radio-telephone technicians are located with an additional roving technician to assist them.

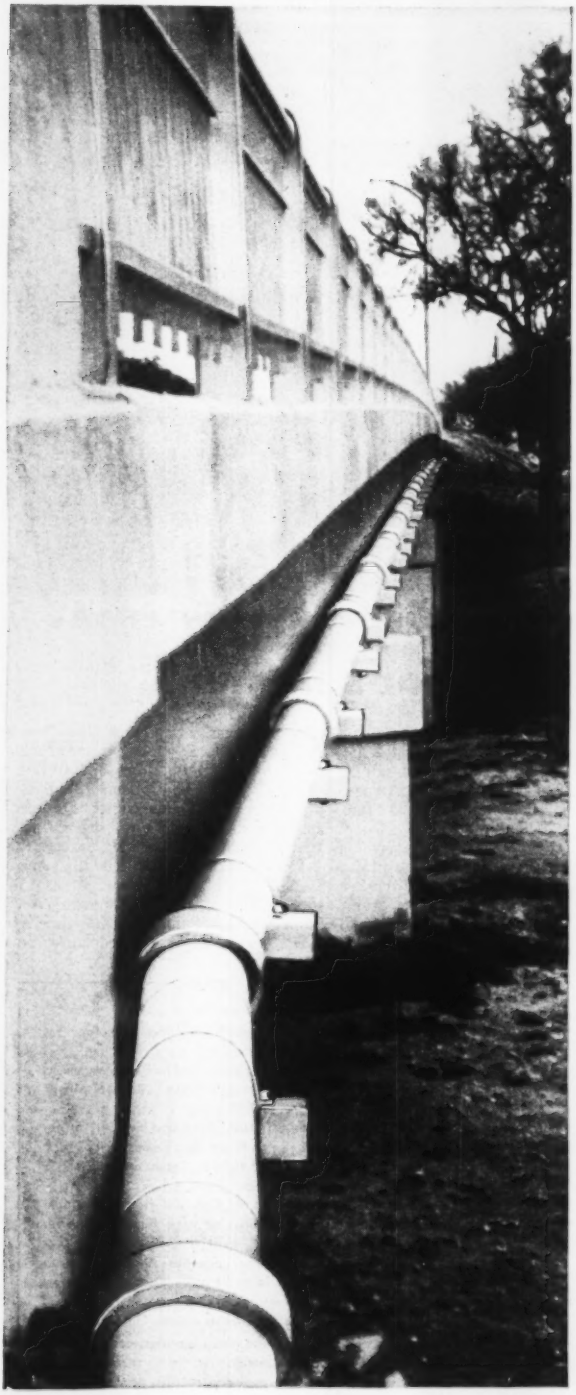
All of this adds up to a considerable cost. But California highway officials are convinced that it will pay off in increased operating efficiency.

Others benefit from the system too. Every minute saved in opening snow-blocked main highways means dollars to truckers. One estimate has set the cost to the trucking industry of closing the Ridge Route (U. S. 99 between Los Angeles and the San Joaquin Valley) at $300,000 for a 12-hour period.

• **Normal operation**—Under normal non-emergency operations the network will expedite equipment repairs, direct men and equipment during summer oiling work, redirect operating crews and the like. For example, during road oiling operations in many instances an oil delivery might be delayed for a day or just a number of hours.

The radio net permits a daily compilation in state headquarters of road conditions throughout the state. This is compiled and relayed before noon each day to newspapers, wire services, commercial radio stations, auto clubs, and highway district headquarters.

• **Credits**—George T. McCoy is state highway engineer for the California Division of Highways. The maintenance radio system is under the general direction of George F. Hellesoe, maintenance engineer, and is the primary responsibility of A. H. Carver, communications supervisor, on the maintenance department staff.



Run of "Century" Asbestos-Cement Pressure Pipe supported on bridge. Note that "Century" Pipe needs no protective painting; external corrosion factors can't affect it.

where permanence counts . . .

"Century"®

asbestos-cement pressure pipe!

Strong . . . durable . . . a water main that will successfully resist exposure to the elements without need of protective treatment—that's "Century" Pipe!

Consider the strength factors that this run of "Century" Pipe has in common with the supporting bridge:

"Century" Pipe is made of practically indestructible materials—Portland cement, reinforced with strong, tough asbestos fibers.

Like the bridge, "Century" Pipe has been built with an extra margin of safety to make certain it is *stronger than it will ever need to be.*

And, like the bridge, "Century" Pipe can "take" traffic vibration. The "Century" Simplex Couplings actually cushion both ends of each pipe section in rubber—which helps to absorb the shocks and vibrations of passing traffic.

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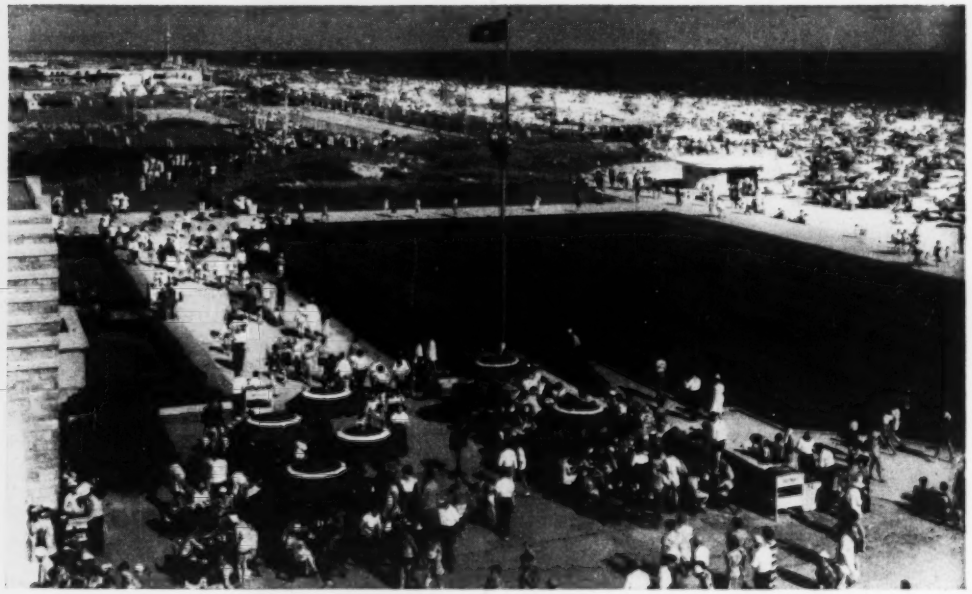


Here's what Jones Beach will look like next summer . . .

Park projects don't wait for summer

THE RED BALL was out for ice-skating over much of the U.S. last week. Winter vacationers made the most of it—or followed the sun south. Northern beaches looked as naked as they did cold. But behind the scenes: building, replacing and repairing for the summer ahead.

Despite DPA restrictions on recreational building that put a crimp in construction starts calling for critical metals, there was work to be done on projects begun earlier and plans to be finished for future improvements. This was in addition to the usual repair and repaint chores of winter.

In Detroit, plans are being pushed for enlargement of a boat basin to accommodate 150 pleasure craft. And an incinerator for 1,500 lb of wet garbage per hour has been finished recently for the municipal beach.

Swimming pool construction has been a major concern in Boston, where a $350,000 pool for Somerville, Mass., is due to be completed this year. Three have recently been built along the Charles River, where there is one other still to be finished.

At far-famed Jones Beach on Long Island's south shore a $30,000,000 recreational investment was being improved last week for the six million visitors who will swarm over it come summer. A new 8,200-seat marine stadium (ENR July 26, 1951, p. 41) was in the final stage of construction, and—more vital to continued popularity of the playground—new sewage disposal facilities were finished and ready.

• **Beach sanitation**—The sewage problem at Jones Beach had been typical of any such park area—remote from the city (30 miles) and accessible chiefly by car. Design population was car population, sewage flow being limited by 16,000-car parking space. Peak park population is under 75,000, but the peak is not the problem in designing recreational facilities. Trouble comes in designing for the severe fluctuations—hourly, daily and seasonal.

On a peak day at this beach some 700,000 gal of sewage flow, all in 15 hours. This is a 1-mgd average rate. Hourly peaks of 2.5 mgd and shorter period peaks of 3.50 mgd must be

JONES BEACH SEWAGE PLANT DATA

Sewage Characteristics—200 ppm BOD and 250 ppm suspended solids.

Screening—Mechanically raked vertical bar screen and hammer-mill grinder for screenings.

Grit Removal—Parabolic Channel capacity 0 to 3.5 mgd controlled by Camp regulator. Normally 1 mgd recirculated from filter effluent to keep aerobic. Mechanical grit removal and washing.

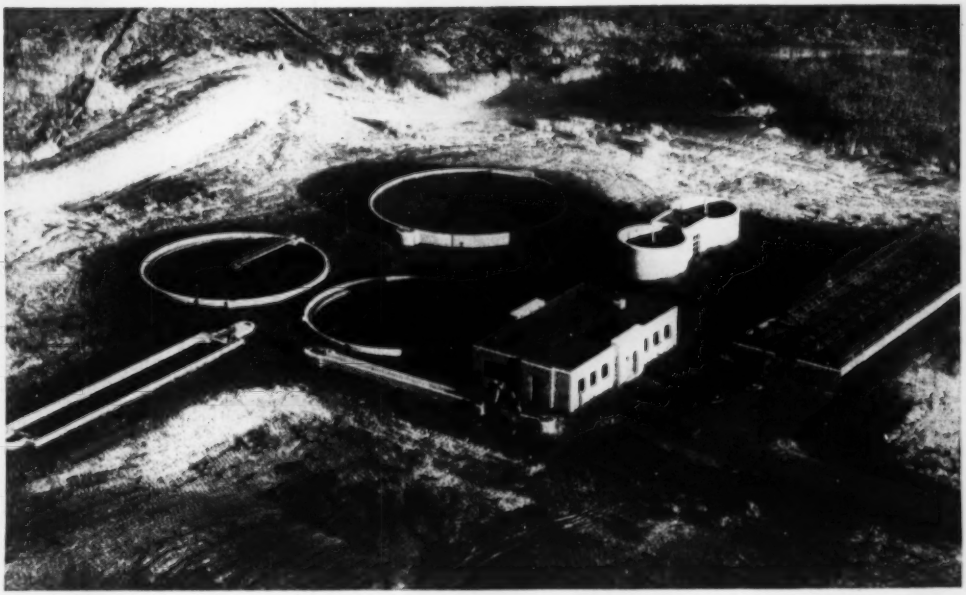
Primary Sedimentation—A 65-ft dia tank with 6-ft swd. Retention time 4.1 hr for 1 mgd, 1.2 hr for 3.5 mgd—300 and 1,060 gal per sq ft per day, respectively.

Secondary Sedimentation—A 65-ft dia tank with 7.5-ft swd. Retention time 1.9 hr for constant 2.5-mgd flow.

Trickling Filter—An 80-ft dia and 3-ft depth of stone. Constant flow 3.5 mgd or 30.4 mg/acre/day—mostly recirculated, except at times of peak flow. BOD load: 0.86 lb/cu yd/day.

Chlorination—Feed to be determined. Contact chamber provides 19-min detention at 2.5 mgd—1,744-ft outfall adds contact time of 14 to 22 min, depending on tides.

Sludge Handling—Secondary settling tank sludge returns to primary tank for thickening. Two 21.5-ft dia heated digesters work in parallel or series; total capacity, 15,840 cu ft. Sporadic sludge-gas production will be dried on glass-covered beds, chopped and used on park properties as soil conditioner.



. . . but right now this is the park's major center of activity (Fairchild Aerial Photo)

designed for, in a plant that must handle equally well rates as low as 0.3 mgd.

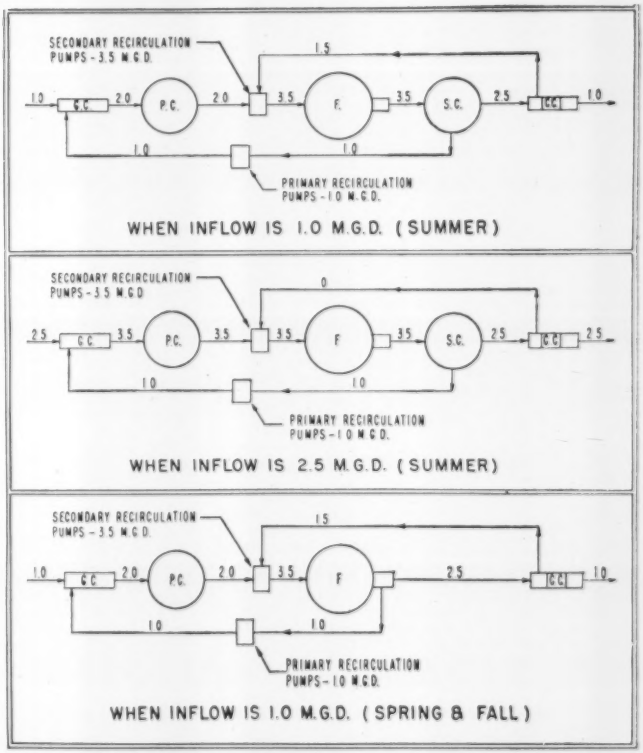
Outgrown septic tanks have been replaced by a collection system with three pump houses to deliver sewage high in sand and rag content across the flat terrain by pneumatic ejector to the treatment works. A pair of centrifugal pumps stands by in each station to handle above-average flow. A high, brackish water table influenced choice of tight-jointed asbestos-cement sewer lines—minimum, 8-in.

A 16-in. force main brings sewage to the treatment plant—built on a consolidated sand fill that puts grade above a +4.0 high-tide mark.

• **Best buy: biofiltration**—Flexibility was guiding factor in choice of treatment process by design consultants Thorndike Saville and Rolf Eliassen. The need was for a plant that would not go septic in low flows, could stand the impact of high flows and would turn out a high quality of effluent at all flows. Experience on Army posts and in cities pointed to high-rate biological filtration of double recirculation type, capable of operation on single recirculation or on primary treatment alone.

Average BOD load on the filter (500 lb per day or .86 lb per cu yd per day) will triple over summer weekends, reaching loadings normal in municipal plants.

Hydraulically, too, the plant had to



FLEXIBILITY IS THE KEY in designing for sewage flows that will vary as widely, daily and seasonally, as at Jones Beach State Park, New York.

be built for wide capacity range, all with close automatic control. Three separate schemes of operation are applicable to the varied flow conditions. These are illustrated in the accompanying drawing. Switchover from one plan of operation to another is controlled by weirs—a weir retaining sewage in one circuit until flow builds up sufficiently to pass to another.

Units of the plant are described essentially in tabular form on the preceding page.

Alexander Potter Associates, New York, supervised construction; South Shore Construction Co. was general contractor. In the park commission, Sidney M. Shapiro is chief engineer; Arthur E. Howland is general manager; Robert Moses is president.

• **Beach erosion**—In Chicago, the rising level of Lake Michigan—now 20 in. above datum—plagues Park District engineers. They estimate that for each inch of rise in lake level, they lose an additional foot of beach—0.4 acre of sand for sun bathers. The work of erosion control is programmed as usual to start this spring.

Studies of erosion control effect are now under way to determine where it is needed the most. Attendance at Chicago beaches normally runs from eight to ten million between July 1 and Labor Day.

San Francisco's Recreation and Park Department has just completed work stabilizing cliffs above James D. Phelan Beach. Chief concern now is to see how they stand up through a wet winter. A bad slide in the early '30's' put the beach into semi-disuse. It is one of few where bathing is practical in an area where currents, wind and summer fog are prevalent.

Notes on legal decisions

Summaries of decisions relating to construction work prepared by I. Vernon Werbin, counselor at law and engineer, New York, author of Legal Phases of Construction Contracts (McGraw-Hill Book Co.)

Renunciation of contract

"Where there has been a renunciation of a contract before time for performance by one party, the other party has a right to pursue any one of three remedies: To rescind the contract; to treat it as still binding and wait until the time arrives for its performance by the promisor, and at such time bring an action on the contract; and, lastly, to treat the renunciation as an immediate breach and sue at once for any damages which he may have sustained. 17 C.J.S., Contracts, Sec. 472, pp. 974-975; 12 Am. Jur., Contracts, Sec. 392."[1]

(1) Old Ladies Home Ass'n v Hall, 52 So. 2d 450, Supreme Court of Mississippi, May 28, 1951.

Liability for negligence on the part of the contractor

"Where the work is lawful, and its performance is not eminently or necessarily dangerous, and the entire work is let by a single contract, the contractor becomes an independent contractor, for whose negligence, and that of his employees in the performance of the work resulting in injuries to third parties, the owner is not responsible, even though he reserves sufficient supervision over the work by an architect, engineer, superintendent, or other person to secure a compliance with the plans and specifications, provided he exercised reasonable care in selecting a skillful, competent contractor."[1]

"An owner, subletting the entire work to independent subcontractors, is not liable for the negligence of any of the latter, being answerable only for his personal affirmative negligence while actually participating in the work, and that rule applies also to a contractor subcontracting his work. It is a well-recognized fact that building operations can be conducted safely and that they are not inherently dangerous."[2]

The above rule is subject to many exceptions. Thus, where the employer personally interferes with the work, and the acts performed by him causes the injury; where the acts performed creates a public nuisance; where an employer is bound by statute to do a thing efficiently and an injury results from the work being performed in an inefficient manner. So, too, where the work to be done is inherently dangerous, or where the employer has supplied a defective appliance for the performance of the work or where the damage done is due to a defect created by the contractor but which the employer might have with reasonable diligence discovered and remedied. The exception has also been applied in a case where, with knowledge that the contractor was indulging in a dangerous and unnecessary practice, the employer does nothing to stop it.[3]

In the latter case, other exceptions to the rule are indicated, such as where the employer fails to use due care in the selection of a competent contractor or where a nondelegable duty is imposed by statute or by common-law.

(1) Duerr v. Consolidated Gas Co., 83 N.Y.S. 714, 86 App. Div. 14.
(2) People v. Gaydica, 203 N.Y.S. 243, 122 Misc. 31.
(3) Kuhn v. P. J. Carlin Const. Co., 278 N.Y.S. 635, 154 Misc. 892.

Rights of subcontractors

Where the general contractor for the erection of a building entered into a subcontract with another to supply and install electric fixtures, the owner is not responsible for payment for the work done by the subcontractor.

The subcontractor claimed that there was an implied obligation on the part of the owner to pay for this work upon the quasi-contractual theory of unjust enrichment. "This theory 'is founded on the principle that no one ought unjustly to enrich himself at the expense of another.' Hillyard v. Smither & Mayton, D. C. Mun. App. 76 A 2d 166, 167. Admittedly defendants (owners) have received a benefit by having the fixtures installed in their house. Speaking loosely, they have been 'enriched.' But we cannot say as a matter of law that it amounted to an unjust enrichment."[1]

(1) Burgess v Grooms, 81 A 2d 338, Municipal Court of Appeals for the District of Columbia, June 1, 1951.

Acceptance of bad work

A contractor undertook to erect a house for a fixed price. After the work was completed it was accepted and paid for by the owner. At the time the work was accepted, there did not seem to be any imperfections or defects in the construction. About six weeks after the owner moved into the house, the wall paper in all the rooms and closets began to wrinkle and crack until fully one-half of the surface of the walls and ceiling of the building became warped, wrinkled and cracked and was in such an unsightly condition so as to be of no use to the owner. This situation was caused by the work having been done by inexpert and inexperienced paperhangers and by the use of a poor grade of lumber which had been placed in the walls, hiddden by the wall paper.

The contractor having refused to remedy the defects, the owner brought an action against the contractor to recover the cost of remodeling the defects and was allowed a recovery. The court held that the mere acceptance of the dwelling and making payment therefor did not estop the owner from recovering such damages, since at the time the work was accepted and paid for, it seemed for all practical purposes to be in good condition.

(1) Rosier v Escue, 48 So 2d 687, (Court of Appeal of Louisiana).

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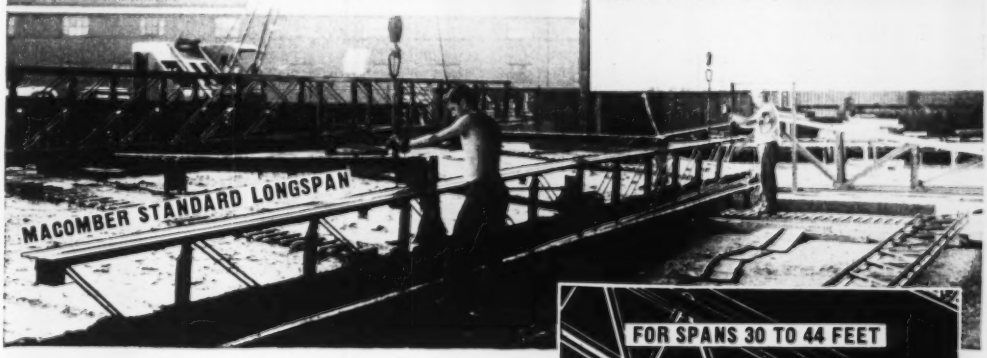

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Accompanying tables will enable designers to select structural steel rolled sections for eccentrically loaded columns with a minimum of effort.

According to the American Institute of Steel Construction Specification for the Design, Fabrication and Erection of Structural Steel for Buildings, Sec. 12, $f_a/F_a + f_b/F_b$ shall not exceed unity. The tables are based on this requirement.

If P is the sum of the eccentric and concentric load in kips, M the moment in inch-kips about any axis, A the column area and S the section modulus, then f_a, the actual axial unit stress, equals P/A; f_b, the actual bending unit stress, equals M/S; F_a, the axial unit stress that the specification would permit if axial stress only existed, equals $17\left(1 - \frac{0.485\ l^2/r^2}{17{,}000}\right)$; and F_b, the bending unit stress that the specification would permit if bending stress only existed, equals 20.

For simplicity, let K equal the term in the parenthesis in the expression for F_a, so that $F_a = 17K$. Then, the specification requirement can be written

$$\frac{P/A}{17K} + \frac{M/S}{20} \leq 1$$

Solving for the allowable load:

$$P \leq 17AK\,(1 - M/20S)$$

Table I gives values of P/K for vari-

TABLE II – K FACTOR

l/r	K	l/r	K	l/r	K	l/r	K
1	1.00	31	0.97	61	0.89	91	0.76
2	1.00	32	0.97	62	0.89	92	0.76
3	1.00	33	0.97	63	0.89	93	0.75
4	1.00	34	0.97	64	0.88	94	0.75
5	1.00	35	0.97	65	0.88	95	0.74
6	1.00	36	0.96	66	0.88	96	0.74
7	1.00	37	0.96	67	0.87	97	0.73
8	1.00	38	0.96	68	0.87	98	0.73
9	1.00	39	0.96	69	0.86	99	0.72
10	1.00	40	0.95	70	0.86	100	0.71
11	1.00	41	0.95	71	0.86	101	0.71
12	1.00	42	0.95	72	0.85	102	0.70
13	1.00	43	0.95	73	0.85	103	0.70
14	0.99	44	0.94	74	0.84	104	0.69
15	0.99	45	0.94	75	0.84	105	0.69
16	0.99	46	0.94	76	0.83	106	0.68
17	0.99	47	0.94	77	0.83	107	0.67
18	0.99	48	0.93	78	0.83	108	0.66
19	0.99	49	0.93	79	0.82	109	0.66
20	0.99	50	0.93	80	0.82	110	0.66
21	0.99	51	0.93	81	0.81	111	0.65
22	0.99	52	0.92	82	0.81	112	0.64
23	0.98	53	0.92	83	0.80	113	0.64
24	0.98	54	0.92	84	0.80	114	0.63
25	0.98	55	0.91	85	0.79	115	0.63
26	0.98	56	0.91	86	0.79	116	0.62
27	0.98	57	0.91	87	0.78	117	0.61
28	0.98	58	0.90	88	0.78	118	0.60
29	0.98	59	0.90	89	0.77	119	0.60
30	0.97	60	0.90	90	0.77	120	0.59

Table 1 – P/K for Eccentrically Loaded Columns

(Note: First value for each column corresponds to r_{xx}, the second to r_{yy}.)

Size	M in inch-kips											r_{xx}	r_{yy}
	0	40	80	120	160	200	240	280	320	360	400		
8WF24	120	108	97	85	74	62	51	39	28	16	5	3.42	
	120	77	34										1.61
8WF28	140	128	117	105	94	82	71	59	48	36	25	3.45	
	140	98	55	13									1.62
8WF31	155	144	132	121	110	98	87	76	65	53	42	3.47	
	155	121	88	54	20								2.01
8WF35	175	164	152	141	130	119	107	96	85	74	62	3.30	
	175	142	109	76	43	10							2.03
8WF40	200	189	177	166	155	144	132	121	110	99	87	3.53	
	200	167	134	100	67	34							2.04
8WF48	240	229	218	207	196	184	173	162	151	140	129	3.61	
	240	208	176	144	112	80	48	16					2.08
8WF58	290	279	268	257	245	234	223	212	201	190	178	3.65	
	290	258	226	194	162	130	99	67	35	3			2.10
8WF67	335	324	313	302	291	280	268	257	246	235	224	3.71	
	335	304	272	241	210	178	147	116	84	53	22		2.12
10WF33	165	156	146	137	127	118	108	99	90	80	71	4.20	
	165	129	93	57	21								1.94
10WF39	195	186	176	167	158	149	139	130	121	112	102	4.27	
	195	160	125	91	56	21							1.98
10WF45	225	216	207	198	188	179	170	161	152	143	133	4.33	
	225	191	157	124	90	56	22						2.00
10WF49	245	236	227	218	209	200	191	182	173	164	155	4.35	
	245	219	193	166	140	113	87	60	34	8			2.54
10WF54	270	261	252	243	234	225	216	207	198	189	180	4.35	
	270	244	218	192	166	140	114	88	62	36	9		2.56
10WF60	300	291	282	273	264	255	246	237	228	220	211	4.41	
	300	274	248	222	196	170	149	118	92	66	40		2.57
10WF66	330	321	312	303	294	285	276	267	258	249	240	4.44	
	330	304	278	252	227	201	175	149	123	97	72		2.58
10WF72	360	351	342	333	324	315	306	297	288	279	270	4.46	
	360	334	308	283	257	231	205	180	154	128	102		2.59
10WF77	386	377	368	359	250	341	332	323	314	305	296	4.49	
	386	360	334	309	283	257	231	206	180	154	128		2.60
10WF89	445	436	427	418	409	400	391	382	373	364	355	4.55	
	445	420	394	369	344	319	293	268	243	218	192		2.63
10WF100	500	491	482	473	464	455	447	438	429	420	411	4.61	
	500	475	450	425	400	374	349	324	299	274	249		2.65
10WF11	560	551	542	534	525	516	507	498	490	481	472	4.67	
	560	535	510	486	461	436	411	386	362	337	312		2.67
12WF40	200	192	185	177	169	161	154	146	131	123		5.13	
	200	163	127	91	54	18							1.94
12WF45	225	217	209	202	194	186	178	171	163	155	147	5.15	
	225	189	152	116	80	43	7						1.94
12WF50	250	242	235	227	219	211	204	196	188	180	173	5.18	
	250	214	179	143	107	71	36						1.96
12WF53	265	257	250	242	235	227	220	212	205	197	190	5.23	
	265	237	210	182	155	127	99	72	44	17			2.48
12WF58	290	283	275	268	260	253	246	238	231	223	216	5.28	
	290	263	236	209	182	154	127	100	73	46	19		2.51
12WF65	325	318	310	303	295	288	281	273	266	258	251	5.28	
	325	303	280	258	236	213	191	169	146	124	102		3.02
12WF72	360	353	345	338	330	323	316	308	301	294	286	5.31	
	360	338	316	293	271	249	227	205	182	160	138		3.04
12WF79	395	388	380	373	365	358	351	343	336	328	321	5.34	
	395	373	351	329	307	284	262	240	218	196	174		3.05
12WF85	425	418	410	403	396	388	381	374	366	359	352	5.38	
	425	403	381	359	337	315	294	272	250	228	206		3.07
12WF92	460	453	445	438	430	423	416	408	401	393	386	5.40	
	460	438	416	395	373	351	329	307	286	264	242		3.08
12WF99	495	488	480	473	465	458	451	443	436	428	421	5.43	
	495	473	452	430	409	387	365	344	322	301	279		3.09
12WF106	530	523	515	508	500	493	486	478	471	463	456	5.46	
	530	508	487	465	444	422	401	379	358	336	315		3.11
12WF120	600	593	585	578	571	563	556	549	541	534	527	5.51	
	600	579	557	536	514	493	471	450	429	407	386		3.13
12WF133	665	658	650	643	636	628	621	614	607	599	592	5.59	
	665	644	623	602	581	559	538	517	496	475	454		3.16
12WF161	805	798	790	783	776	768	761	754	747	739	732	5.70	
	805	784	764	743	722	701	681	660	639	619	598		3.20
12WF190	950	943	935	928	921	913	906	899	892	884	877	5.82	
	950	930	909	889	868	848	828	807	787	766	746		3.25
14WF43	215	208	201	194	188	181	174	167	160	153	146	5.82	
	215	177	139	101	63	25							1.89
14WF48	240	233	226	219	213	206	199	192	185	178	171	5.86	
	240	204	165	127	80	52	15						1.91
14WF53	265	258	251	245	238	231	224	217	210	204	197	5.90	
	265	228	191	154	117	80	43	6					1.92
14WF61	305	298	292	285	279	272	265	259	252	246	239	5.98	
	305	277	248	220	191	163	135	106	78	50	21		2.45

Size	M in inch-kips											r_{xx}	r_{yy}
	0	40	80	120	160	200	240	280	320	360	400		
14WF68	340	333	327	320	314	307	300	294	287	281	274	6.02	
	340	312	284	255	227	199	171	142	114	86	58		2.46
14WF74	370	363	357	350	344	337	330	324	317	311	304	6.05	
	370	342	314	286	258	230	202	174	146	119	91		2.48
14WF78	390	384	377	371	364	358	352	345	339	332	326	6.09	
	390	367	345	322	299	277	254	232	209	186	164		3.00
14WF84	420	414	407	401	394	388	382	375	369	362	356	6.13	
	420	398	375	353	330	308	286	263	241	218	196		3.02
14WF87	435	429	422	416	410	403	397	391	385	378	372	6.15	
	435	417	399	381	363	344	326	308	290	272	254		3.70
14WF95	475	469	462	456	449	443	437	430	424	417	411	6.17	
	475	457	439	421	403	385	367	349	331	313	295		3.71
14WF103	514	508	501	495	489	483	476	470	464	458	451	6.21	
	514	496	478	460	442	424	407	389	371	353	335		3.72
14WF111	555	549	542	536	530	524	517	511	505	499	492	6.23	
	555	537	519	501	484	466	448	430	412	394	376		3.73
14WF119	595	589	582	576	569	563	557	550	544	537	531	6.26	
	595	577	560	542	524	506	489	471	453	436	418		3.75
14WF127	635	629	622	616	610	603	597	591	585	578	572	6.29	
	635	617	600	582	565	547	529	512	494	477	459		3.76
14WF136	680	674	667	661	654	648	642	635	629	622	616	6.13	
	680	662	645	627	609	591	574	556	538	521	503		3.77
14WF142	711	704	698	691	685	679	673	667	660	654	648	6.32	
	711	694	678	661	644	627	611	594	577	561	544		3.97
14WF150	749	743	736	730	724	717	711	705	699	692	686	6.37	
	749	733	717	700	684	667	650	634	617	601	584		3.99
14WF158	790	784	778	771	765	759	753	747	740	734	728	6.40	
	790	773	757	740	724	707	691	674	658	641	625		4.00
14WF167	835	829	822	816	810	803	797	791	785	778	772	6.42	
	835	818	802	785	769	752	736	719	703	686	670		4.01
14WF176	879	873	866	860	854	847	841	835	829	822	816	6.45	
	879	863	846	830	813	797	781	764	748	731	715		4.02
14WF184	919	913	906	900	894	887	881	875	869	862	856	6.49	
	919	903	886	870	853	837	821	804	788	771	755		4.04
14WF193	964	958	952	945	939	933	927	921	914	908	902	6.51	
	964	948	931	915	899	882	866	850	834	817	801		4.05
14WF202	1010	1004	998	991	985	979	973	967	960	954	948	6.54	
	1010	994	977	961	945	929	912	896	880	864	847		4.06
14WF211	1055	1049	1043	1037	1031	1025	1019	1013	1007	1001	995	6.56	
	1055	1039	1023	1006	990	974	958	942	925	909	893		4.07
14WF219	1094	1088	1082	1075	1069	1063	1057	1051	1044	1038	1032	6.59	
	1094	1078	1062	1045	1029	1013	997	981	964	948	932		4.08
14WF228	1140	1134	1128	1121	1115	1109	1103	1097	1090	1084	1078	6.62	
	1140	1124	1108	1091	1075	1059	1043	1027	1010	994	978		4.10
14WF237	1185	1179	1173	1166	1160	1154	1148	1142	1135	1129	1123	6.65	
	1185	1169	1153	1137	1121	1104	1088	1072	1056	1040	1024		4.11
14WF246	1230	1224	1218	1212	1205	1199	1193	1187	1181	1175	1168	6.68	
	1230	1214	1198	1182	1166	1150	1134	1118	1102	1086	1070		4.12
14WF264	1320	1314	1308	1301	1295	1289	1283	1277	1270	1264	1258	6.74	
	1320	1304	1288	1273	1257	1241	1225	1209	1194	1178	1162		4.14
14WF287	1434	1428	1422	1415	1409	1403	1397	1391	1384	1378	1372	6.81	
	1434	1418	1402	1387	1370	1355	1339	1323	1308	1292	1276		4.17
14WF314	1569	1563	1557	1550	1544	1538	1532	1526	1519	1513	1507	6.90	
	1569	1553	1538	1522	1507	1491	1475	1460	1444	1429	1413		4.20
14WF342	1710	1704	1698	1691	1685	1679	1673	1667	1660	1654	1648	6.99	
	1710	1694	1679	1663	1648	1632	1617	1601	1586	1570	1555		4.24
14WF370	1849	1843	1837	1831	1825	1818	1812	1806	1800	1794	1788	7.08	
	1849	1833	1817	1801	1785	1769	1754	1738	1722	1706	1690		4.27
14WF398	1989	1983	1977	1970	1964	1958	1952	1946	1939	1933	1927	7.17	
	1989	1974	1958	1943	1928	1912	1897	1882	1867	1851	1836		4.31
14WF426	2129	2123	2117	2111	2105	2099	2093	2087	2081	2075	2069	7.26	
	2129	2114	2099	2084	2069	2054	2040	2025	2010	1995	1980		4.34

ous sizes of columns. To obtain P, values in Table I should be multiplied by K, which can be obtained from Table II for various values of l/r up to 120.

If kl/bt exceeds 600 the table cannot be used. However, the allowable vertical load may be obtained from $P = 17AK(1 - M/F_bS)$, where $F_b = \frac{12,000}{kl/bt}$. Only unusually long columns will require a reduction of stress due to excessive kl/bt.

• **Example**—Find the size of column, with an unsupported length of 14 ft, to carry a 150-kip axial load and a 20-kip load 10 in. off center.

Solution—$P = 150 + 20 = 170$ kips, and $M = 20 \times 10 = 200$ in. kips. For a trial column, assume $K = 0.8$, so that the required $P/K = 170/0.8 = 212$.

From Table I, when $M_{xx} = 200$, the closest P/K is found to be 225, for a 10-in. 54-lb wide-flange beam. The l/r of this member is 168/4.39, or 38.2.

From Table II, $K = 0.96$. Hence, the allowable $P = 225 \times 0.96 = 216$. This is so much larger than the 170-kip applied load that choice of a smaller column would be advisable.

Try a 10-in. 45-lb beam, with $l/r = 38.8$ and K, from Table II, 0.96. The allowable $P = 0.96 \times 179$ (from Table I) $= 172$ kips. This beam is satisfactory.

Computing areas

In city surveying, after closing a traverse it is usually necessary to compute the area contained therein. If the traverse is a quadrangle, such as a city block, the following formula may be used for maximum efficiency.

Area $= (\Sigma L \bullet \Sigma D) - \Sigma LD/2$

where: $\Sigma L \bullet \Sigma D$ = the product of the sums of the positive (or negative) latitudes and departures

and: ΣLD = the sum of the products of the latitude and departure of each side of the quadrangle without regard to sign

It will be noticed that the results obtained when closing the traverse are used to determine the area. MARVIN GATES, *Brooklyn, N. Y.*

Beaded traffic lines made standard in Jersey

Addition of glass beads to the surface of painted center lines has now been made standard practice on highways under the jurisdiction of the New Jersey State Highway Department.

Cost of the beaded white lines, according to Ransford J. Abbott, state highway commissioner, now is only slightly over one cent a foot, which is not much more than the cost of a white line without beads. Also, a test made last year on U. S. 1 between Rahway and the Pulaski Skyway indicates that the beaded lines may be cheaper in the long run as the beaded lines stand up longer under traffic. Heretofore, in the test area, it has been necessary to repaint the traffic lines three times a year. Painting was only required twice in 1951.

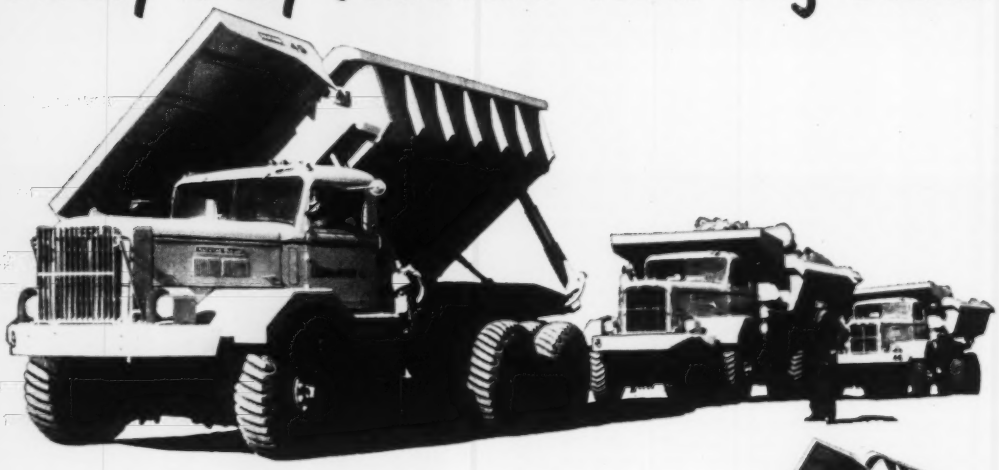
Among recent developments in New Jersey is application of beaded paint to curbs to increase their visibility.

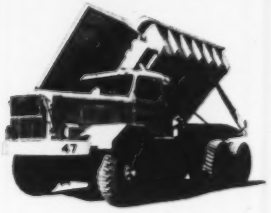
In recent years several thousand new types of reflector signs have been erected on the state system. These signs employ a beaded surface to reflect their message to drivers.

ANY SUGGESTIONS?

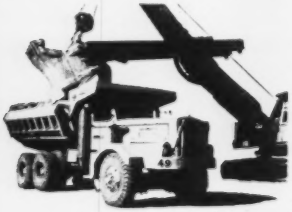
We would like to hear of interesting new devices and methods devised by our readers to speed up and simplify field work; or of new techniques intended to simplify design computations. We will pay for published items, so send your suggestions to ENR's Field and Office Editor at 330 W. 42nd St., New York 36, N. Y.

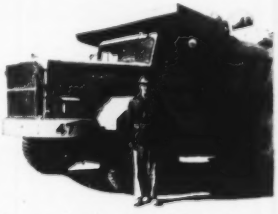
Heavy-Duty Autocars Haul Big Loads





Here are three mighty DC-20064 Autocar-Diesel 6-wheelers with 12-yard bodies owned by Columbia Quarry Co., of St. Louis, Mo. These Autocars take a series of shattering blows from shovelfuls of rock, move the resulting crushing loads quickly and easily over the roughest kind of going, and come back for more . . . not just once, but day after day for years on end. They do this work, in Columbia, Ill., with only routine maintenance, because they are built for it—custom-built, like every Autocar made, for dependable, low-cost performance under specific conditions of road and load. For moving material in volume, you can't beat superbly engineered, heavy-duty Autocars.





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H. W. MORRISON—President, chairman of the board and driving force of Morrison-Knudsen Co., Inc.

Putting a new face on old Afghanistan is one of Morrison-Knudsen's projects

Ernie Hood
Staff correspondent

The Morrison-Knudsen Co., Inc. is bringing another backward land into the 20th century.

This time it's Afghanistan, the little known and forbidding Asiatic nation landlocked between Russia and Pakistan.

When current M-K projects have been completed, the Afghans will have an irrigation system complete with several water storage dams and many miles of canal for the reclamation of about 850 sq mi of desert land.

The rugged country's nomads have already filed 12,000 applications for the farms that will be developed under the program of King Mohammed Zahir Shah, hoping to add cotton, wheat and fruit crops to the national production.

• **First contract**—The Afghan government first contacted M-K in 1945 and at its invitation, the company sent representatives overseas to study the proposals. Afghanistan raised $17 million by selling caracul furs in the United States and borrowed additional millions from the Export-Import Bank to enter into initial contracts with M-K in March, 1946.

Operations under that first contract were brought to a close in May, 1950, and a new contract is now in effect. The first contract amounted to $23 million and the second contract totaled approximately $30 million.

Under the terms of the first contract M-K was required to prepare engineering designs and construct such projects as the Afghan government desired—within the limits of available funds.

• **Data and design**—At the outset of contract negotiations, fewer than 125 Americans had visited the little known kingdom in all its history.

M-K engineers and construction specialists were assigned to widely scattered locations to make topographical, hydrological, and economic surveys. They drilled to determine the sub-surface formations at the sites of various projects under construction. They collected other data necessary for the preparation of engineering designs.

Actual design work was performed by International Engineering Co., Inc., San Francisco, Calif., a subsidiary of M-K.

Surveys and final designs were completed for 24 different projects involv-

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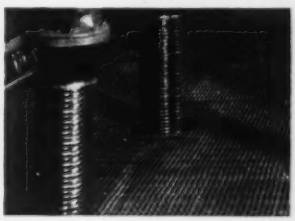

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ing irrigation, flood control and power dams, electric power plants, municipal water supply systems, highways and bridges and civic, commercial and industrial buildings.

• **Stages**—In various stages of completion at the conclusion of the first contract were 17 additional projects. Collectively these engineering surveys and designs and their cost data constitute a shelf of projects which the Afghan government will undertake in future construction programs.

The total of the first contract involved, in addition to engineering phases, the procurement of several million dollars worth of heavy construction equipment which is now operating in Afghanistan; and the construction of base camps consisting of dormitories, individual dwellings, and several warehouse, shop and administrative buildings necessary for carrying forward construction phases of the public works program in the initial and future years.

In addition, construction was completed on the Kandahar-Spin Baldak highway—where the camels of the nomadic population are part of traffic along with the motor vehicles of Americans and Europeans—the Mel Manda and Arghastan highway bridges. And the first unit of the Boghra irrigation project was built. It includes a powerhouse, intake structures, wasteway and siphons as well as the excavation of 40 mi of the 100-ft wide main canal.

• **Second contract**—The current, or second, contract provides specifically for the construction of:

1. Kajakai Dam, an earth and rock-fill structure, spillway and hydroelectric power plant on the Helmand River approximately 60 mi upstream from the town of Girishk. The dam is 300 ft high, 1800 ft long and has a volume of 4,200,000 cu yd. This job involves two 35-ft dia tunnels—one of which will carry water for irrigation and the other water to the 60,000-kw power plant. Work was started in March, 1950. The tunnels were completed in February, 1951, and the river diverted through the tunnels in August, 1951. Completion of the project is scheduled for March, 1953.

2. Arghandab Dam, an earth and rock-fill structure, spillway and hydroelectric power plant on the Arghandab River approximately 20 mi northeast of the city of Kandahar. This dam is 177 ft high, 1775 ft long at the crest and has a volume of 2,490,000 cu yds. Work was started in June, 1950, and completion is set for March, 1952. This job also involved a tunnel 18 ft in dia and 900 ft long, and the tunnel was completed in February, 1951.

3. The Boghra-Marja-Shamalan irrigation system, located in the Helmand River valley. Work under the second contract involves completion of a series of canals and concrete control structures initiated under the first contract and extended under the second to include additional areas. Sixty mi of canals and various structures have been completed to date. The probable completion date is March, 1953.

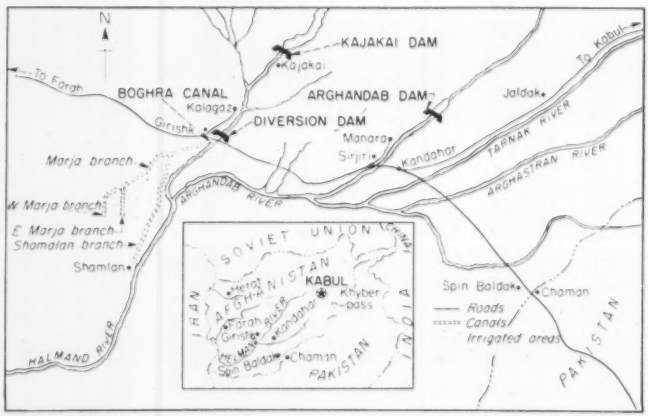
THE OLD AND THE NEW—Ships of the desert meet in Afghanistan—the traditional camels and a Euclid truck of Morrison-Knudsen Afghanistan, Inc., with an Afghan driver.

• **Equipment**—M-K reports there has been little difficulty in getting equipment into Afghanistan over the Pakistan border. The few delays encountered have been of a technical character such as might be experienced on the border of any country. The officials of Pakistan have been cooperative and helpful.

Recalling that back in 1945-46 heavy equipment was scarce, M-K explains that it purchased, by competitive bid, large quantities of surplus construction equipment on Saipan and Tinian, Pacific islands, at the end of the war, shipped each unit to Portland, Ore., and there knocked down and reconditioned every unit before shipment to Afghanistan. Another difficulty in the beginning was the shortage of shipping space and even a shortage of oceangoing vessels.

Afghanistan is a nation without a seaport, and all equipment is shipped to and unloaded at Karachi, Pakistan, and reshipped. The average shipping time from New York to Karachi is 40 days, with seven additional days for shipment from Karachi to Afghanistan.

• **Training labor**—Afghanistan labor performs such duties as operating heavy tractors, shovels, draglines; and is also doing the work of plumbers, electricians, machinists, and welders. They are also successfully handling duties in the testing laboratories at



VICINITY MAP—This map—not to scale—shows the location of present M-K work in Afghanistan.

Arghandab Dam. A total of 39 Afghans are performing engineering duties.

All of these men were completely unacquainted with modern construction methods at the time of M-K's entry into Afghanistan. The training of Afghan personnel in modern construction methods has been, and continues to be, one of the basic objectives of M-K operations in that country since it is a part of the moral obligation of the contract and one which M-K takes very seriously.

The Afghanistan operation is just one of many foreign jobs in which M-K is now engaged through its subsidiaries.

Other foreign operations include:

• **Brazil**—For Rio de Janeiro Light and Power Co. Ltd., construction of Paraiba-Pirai diversion project near Rio, a hydroelectric development consisting of three dams, two tunnels, two pumping stations and several mi of concrete-lined canals. Designed to provide an increased supply of electric power to the Rio de Janeiro area, the project totals $29 million.

• **Venezuela**—Construction of Boqueron tunnels, aggregating approximately 8,000 lineal ft of twin-bore tunnels for the Caracas-La Guaira highway, costing $23 million.

• **Brazil**—For Companhia Hidro-Electrica do Sao Francisco of Rio de Janeiro, construction of approximately 500 mi of 220-kv electric power transmission lines extending northward from Paulo Afonso to Recife, and southward from Paulo Afonso to Salvador, costing $2.6 million.

• **Colombia**—500 kilometers (distance of approximately 310 mi) of highway, under the national highway program, costing $10 million.

• **Peru**—Construction of Rio Quiroz irrigation project, consisting of 14 tunnels varying in length from 600 ft to 16,000 ft; 13 mi of canals and three intake structures; and engineering investigations and test borings for the proposed Palomino Dam, costing $8 million.

• **Ceylon**—Construction of Gal Oya Dam and Power plant in the eastern province primarily for irrigation, power and flood control, at a cost of $12 million.

• **New Zealand**—Construction of the 5¼ mi long Rimutaka Tunnel on the Wellington-Wairarapa Railway, costing $6.5 million.

• **Canada**—For the Aluminum Co. of

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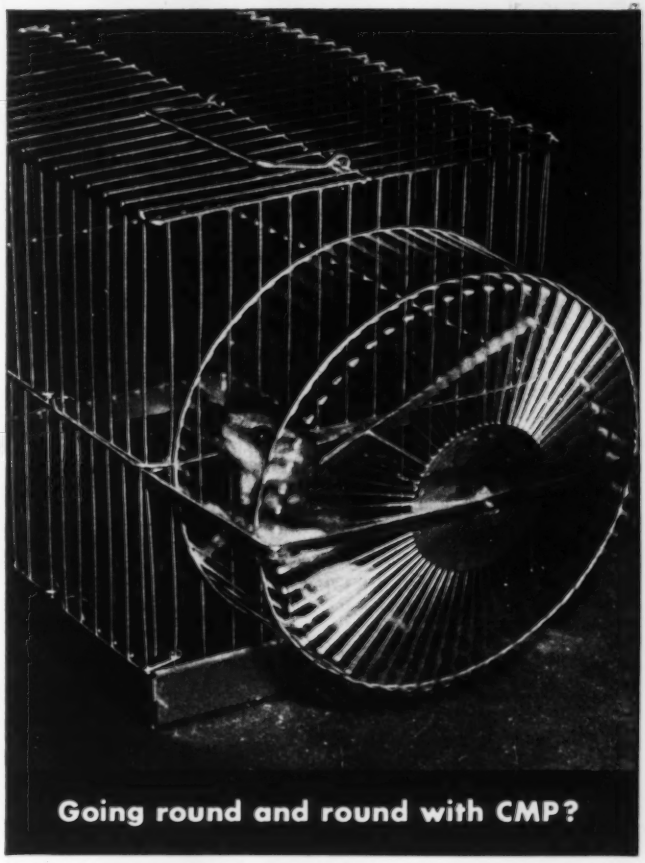

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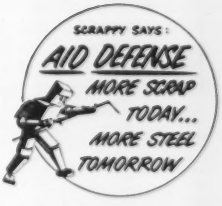

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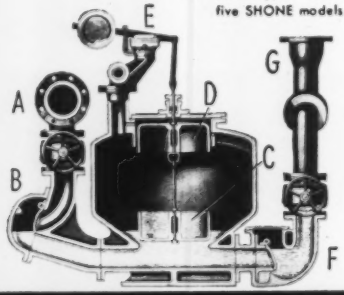

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International . . .

Canada, Ltd., construction of the hydroelectric power development features of the Nechako-Kitimat project in British Columbia, approximately 500 mi north of Vancouver. (ENR Nov. 29, '51, p. 40)

For the Iron Ore Co., of Canada, a $25 million job for the construction of a 365-mi long railroad from Seven Islands on the St. Lawrence River in Quebec to the newly-discovered iron ore fields in the vicinity of Knob Lake near the border of Labrador.

The firm also reports that it is associated, either through direct joint venture participations with other contractors, or through interests on the contracts awarded to independent contractors, in the construction of military bases, hydroelectric developments, oil development facilities and oil pipelines in Africa, Italy, Sumatra, Iraq, and in the Pacific, Alaska, Hawaii and Mexico.

The M-K books show a volume of $298,149,000 for the parent firm and its subsidiaries during 1951, of which $209,911,000 was domestic and $88,238,000 foreign. The total volume in 1950 was $133,625,000, of which $44,567,000 represented foreign jobs; and the volume in 1949 was $120,562,000; $36,342,000 being foreign.

• **Harry W. Morrison**—Driving force of the M-K Co., Inc., is 67-year-old president and chairman of the board, Harry W. Morrison.

Jointly with the late M. H. Knudsen he organized the Morrison-Knudsen Co. in March, 1912. Their resources included $600, a few teams of horses and a half-dozen wheelbarrows.

The firm reached an annual business volume of $1 million for the first time in 1923.

In 1930, Morrison—known to his business associates as "Harry" or "H.W."—was one of the leading figures in the organization of the Six Companies Inc. (builders of Hoover Dam) and this same group of contractors thereafter maintained association through various corporations and joint ventures in building such outstanding works as the San Francisco Bay Bridge (superstructures); Grand Coulee Dam; Bonneville Dam; Geneva Steel Works, Provo, Utah; and other large-scale projects.

At 67 the energetic construction tycoon maintains a vigorous pace, an imaginative grasp of possibilities, a consistent initiative in organizing new undertakings (M-K had about $325 million in backlog projects on the books last Dec. 31) and an ability to break bottlenecks that many men half his age would envy.

LEONARD BAILEY, city engineer

Knoxville sewage system plans ready for bids soon

Plans for a $5.2-million sewage plant-interceptor system at Knoxville, Tenn., have been completed and will be let for bids within 90 days, City Engineer Leonard Bailey announced.

The plant and installation of trunk line sewers were approved by Knoxville voters in a referendum Nov. 15. Date for receiving bids has not yet been set, because arrangements for selling bonds and acquisition of rights-of-way have not been completed. All necessary state and federal approvals have been received.

Greeley and Hansen, Chicago engineering firm, drew plans and specifications. Walter S. Smith of Knoxville was appointed supervisory engineer for construction with the Chicago firm acting as consultants.

The system will include two treatment plants and about six mi of interceptors, varying from 18 to 78 in. There will be two river crossings and three pumping stations. One treatment plant will dispose of 25 mgd, the second 1 mgd, of raw sewage.

Most of the sewage will flow by gravity to the river bank at Third Creek which is the location of the larger plant. A small part of the city and the adjoining area to the northeast will be served by the smaller plant, to be located on the Holston River at the outlet of Love's Creek.

The Love's Creek plant will serve about 7600 population and the Third Creek plant about 261,000, with Third Creek plant handling industrial waste equivalent to 300,000 pop. The smaller plant will process domestic sewage only.

The city of Knoxville lies on both sides of the Tennessee River in the backwater of the Tennessee reservoir. Installation of the new system will do much to clear the reservoir.

Law-knotted public garage untied by court decision

Commercial parking lot operators lost their 15-month battle to prevent the City of Hartford, Conn., from building a $3-million public parking garage. The Connecticut Supreme Court of Errors, in a unanimous decision, held that voters legally approved the project at a disputed special election of Nov. 7, 1950.

When informed of the decision, City Manager Carleton F. Sharpe termed the decision very gratifying, and said the city would move as rapidly as possible to provide the off-street parking facility. He declared the improvement more needed than ever, but said that, due to the delay, the garage would not be built for two years.

Mr. Sharpe explained that since the bond issue was voted construction prices had risen and federal materials restrictions have been imposed.

First action will be to clear the way for the sale of the $3-million bond issue. Then negotiating procedures for the acquisition of land for a ramp-garage project will be set up. At the present time no site has been selected.

It is hoped that a garage to accommodate several thousand cars daily will be built.

Although no engineers, architects or contractors have been designated, Ramp Garage, Inc. of New York City has submitted preliminary plans.

Municipal briefs . . .

• **Doesn't want help**—Akron, Ohio, has decided to reject a federal grant of $1,250,000 for slum clearance on the ground that the blighted areas are not widespread enough to warrant demolition and reconstruction. Earlier the city had asked that the $1,250,000 be set aside for urban redevelopment until a preliminary study could be made.

• **Boston's slum plan**—A $40-million federally-aided slum clearance and urban redevelopment project is soon to be launched in Boston, Mass., according to Mayor Hynes. The city is to contribute about 30 percent of the cost of the project.

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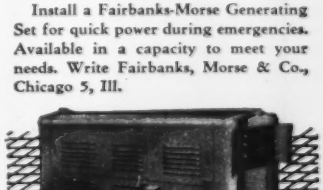

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Want Calumet Canal completed for traffic

The importance of the completion of the Calumet-Sag Canal near Chicago was stressed at the St. Louis meeting of the Mississippi Valley Association last week.

Hjalmar W. Johnson, vice-president of the Inland Steel Co., said that millions of tons of freight now taxing the highways and railroads of the industrial area of the North Central states would be moved through this Illinois-Mississippi waterway if it were finished and put into operation. The project was part of a program authorized by Congress in 1946 but never carried out.

The association passed a resolution criticizing the policy of cutting off funds for new river development as an economy measure, and urged Congress to provide $9 million for surveys and planning, as well as adequate funds annually.

Close of the convention was marked by a clash over the St. Lawrence Seaway. Convention officials said Lt. Gen. Lewis A. Pick, chief of the U. S. Army Corps of Engineers, did not reply to a letter asking him to make the keynote speech at a special session on Missouri Basin development. Proposals for the association to reverse its stand against the seaway, or to omit any reference to the seaway, were both defeated.

Draftsmen are needed

Action to ensure a constant flow of qualified architectural draftsmen and assistants to architects' offices was urged at the recent annual convention of the Ontario Association of Architects at Toronto. Complaint was made that many architects, after obtaining practical experience required for registration as architects, following graduation, immediately opened their own offices. Steps had to be taken to ensure a steady supply of architectural draftsmen as a result. Earle L. Sheppard, Toronto, was elected president of the association for a second term, with Gordon S. Adamson, Toronto, as vice-president. New officers of the western chapter of the Wisconsin Society of Professional Engineers taking offices at a recent meeting at LaCrosse are: Carl A. Wahlstrom, director of the LaCrosse board of public works, president; Lawrence F. Kehoe, vice-president, and Donald W. Grundiz, secretary-treasurer.

Industrial and municipal wastes to be discussed

A series of annual municipal and industrial waste conferences will be sponsored jointly by Duke University, North Carolina State College and the University of North Carolina. The first conference will be March 13-14 at N. C. State College in Raleigh.

The subject of the conference will be "Clean Streams in Southern Economy." There will be a workshop discussion of current waste disposal problems, special attention to be given to the textile, synthetic fiber and paper industries.

Copies of the programs will be mailed to industrial and municipal personnel. For full information write Prof. Nelson Demerow, Civil Engineering Dept., North Carolina State College, Raleigh, N. C.

Carroll A. Farwell, of the engineering firm of Fay, Spofford & Thorndike, Boston and New York, has been elected president of the American Institute of Consulting Engineers. Mr. Farwell is a past president of the Northeastern Section of the American Society of Civil Engineers.

CALENDAR

Mason Contractors' Association, convention, Palmer House, Chicago, Ill., Feb. 24-27.

Materials Handling Conference, Purdue University, Lafayette, Ind., Feb. 25-26.

Associated General Contractors of America, Statler Hotel, Detroit, Feb. 25-28.

Materials Handling Conference, Purdue University, LaFayette, Ind., Feb. 25-26.

Building Research Advisory Board, conference on condensation control in buildings, National Academy of Sciences, Washington, D. C., Feb. 26-27.

American Concrete Institute, Netherland Plaza Hotel, Cincinnati, Ohio, Feb. 26-28.

American Concrete Pipe Association, annual convention, Drake Hotel, Chicago, Ill., Feb. 28-March 1.

American Society for Testing Materials, spring meeting, Hotel Statler, Cleveland, Ohio, March 3-7.

American Society of Civil Engineers, winter meeting, St. Charles Hotel, New Orleans, La., March 3-7.

American Railway Engineering Association, Palmer House, Chicago, March 11-13.

Ohio Society of Professional Engineers, Hotel Statler, Cleveland, March 13-15.

New Jersey Sewage and Industrial Wastes Association, Traymore Hotel, Atlantic City, N. J., March 12-14.

Structural conference, University of Texas, March 21-22.

American Power Conference, Sherman Hotel, Chicago, March 26-28.

OBITUARIES

B. W. Creim, Interior Dept.

Ben W. Creim, 54, head of the Interior Department's Southeastern Power Administration, died at Elberton, Ga., Feb. 4. He had been charged with the work of marketing power from federal hydraulic projects in the Southeast. He began his government career as a regional engineer for the Rural Electrification Administration, organizing it in 19 western states.

N. H. Sayford, 67, civil engineer, recently retired from active service with the Tennessee Valley Authority, died at Chattanooga, Tenn., Feb. 5. He was a 1908 C.E. graduate of Lehigh University.

G. Lewis Taylor, 72, an executive engineer and authority on the economics of fabricated steel structures, died in Claremont, Calif., Jan. 26. From 1920 to 1929 he was chief engineer of the McClintic Marshall Co. at Pottstown, Pa. With William Jordan, engineer, he was responsible for the building of the Alfred H. Smith Memorial Bridge of the New York Central R.R. over the Hudson River at Castleton, nine miles south of Albany, N. Y.

Harold J. Ludden, 62, in charge of general construction for the Buffalo office of the N. Y. State Department of Public Works, died Jan. 27. He directed field construction of the department's projects in Erie, Niagara, Cattaraugus and Chautauqua counties.

Lt. Comdr. Lyle F. Bellinger, 85, oldest officer in the Navy Civil Engineer Corps, died at Chamblee, Ga., Feb. 1. Before he joined the CEC he was with the Army Corps of Engineers. He was a C.E. graduate of Cornell, 1887.

Wm. B. Haines, 71, active in railroad construction for more than 50 years, died in Baltimore, Md., Feb. 4.

C. J. Seibert, 76, civil engineer who helped supervise installation of the water supply system for the Pentagon, died in Washington, D. C., Feb. 6.

John T. Campbell, 64, a graduate of the University of Pittsburgh, and since 1918 a partner in The Chester Engineers of Pittsburgh, Pa., died recently.

Frank C. Eisenach, 57, assistant director of the planning and traffic division of the Michigan State Highway Department, died Jan. 30.

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New partners announced by northwest engineers

R. E. Koon has retired from the partnership of Stevens & Koon, Portland, Ore., consultant engineering firm, and the practice will continue under the firm name of Stevens & Thompson Engineers.

J. C. Stevens and H. Loren Thompson, partners, have named Charles V. Foulds, Frank T. Koehler and Marvin W. Runyan as associates of the firm.

J. C. Stevens, one of the founders of Stevens & Koon, was national president of the ASCE in 1945. Thompson, a partner since 1946, came to the firm in 1945 from the faculty of the Technological Institute, Northwestern University. From 1938 to 1942 he was on the staff of the College of Engineering, University of Idaho.

Foulds was for many years vice-president in charge of engineering and manufacturing with the Pelton Water Wheel Co., of San Francisco. In addition, he served Medellin, Colombia, S. A., as consulting hydroelectric engineer for about seven years and worked on design and construction of Colombian mining company power plants. He has been with the firm since May, 1951 as chief engineer on the design of the powerhouse for the Lookout Point Dam, near Portland.

Long-time employee of Stevens & Koon, Koehler was chief engineer on the design of the Umatilla Ordinance Depot and has been in charge of the design of 26 pumping stations in the Portland area.

Runyan, Oregon State College graduate, has been with the firm since 1941 and was in charge of the design and construction of many sewage treatment plants in Washington and Oregon for the firm.

Careers . . .

• **Appointed**—**Irving B. Remsen, Jr.**, formerly a division engineer of American Viscose Corp. has joined the headquarters engineering staff of Hall Laboratories, Inc., Pittsburgh, Pa., for work as technical consultant on waste water problems . . . **Col. Philip R. Garges**, deputy to the engineer-in-chief, Far East Command Tokyo, since 1948, became district engineer, Corps of Engineers, at Buffalo, N. Y., on Feb. 15 . . . **Col. H. W. Shull, Jr.**, former district engineer, Buffalo, N. Y., is the new district engineer, Jacksonville, Fla . . . **Roger D. Ley**, made hydraulic engineer of Great Northern Paper Co., Millinocket, Me.

J. C. STEVENS, of Stevens & Thompson Engineers.

• **Elected**—**Samuel P. Brown** and **G. Harold Warfield**, were admitted to partnership in the firm of Coverdale & Colpitts, consulting engineers of New York City . . . **J. J. O'Donnell**, personnel and labor relations manager for The Lummus Co., New York, elected president of the National Constructors Assn. . . . **Edwin H. Davis**, president of the Hocking Valley Brick Co., and New York Coal Sales Co., was voted president of Structural Clay Products Institute, region 4 . . . **Dr. Howard S. Turner**, director of the research and development division of Pittsburgh Consolidation Coal Co., Pittsburgh, Pa., elected member of board of directors of Turner Construction Co.

• **Honored**—**John C. Boyle**, vice-president and general manager of the California Oregon Power Co., named Oregon's "Outstanding Engineer" of 1951 by the Professional Engineers of Oregon . . . **Herbert Curtis, W. Smith, James Melville**, and **Robert Carden**, four employees of the American Bridge Co., were honored by a testimonial dinner in Pittsburgh . . . **Antonio Lucchetti**, executive director of the Puerto Rico Water Resources Authority, was presented a life membership in the ASCE.

• **Retired**—From the Washington district, Corps of Engineers, after half-century of engineering accomplishment, **Anthony E. Steere** . . . **Jesse Hill**, chief engineer, International Boundary Commission, retiring from the federal service after 43 years with the commission.

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We who know them so intimately, and can appreciate their work and their problems so fully, pay tribute to America's engineers and pledge to them our fullest cooperation.

This year, with the nation's rearmament as our most urgent task, their dreams and their efforts are vital to our survival. We pray that their dreams will be big . . . dreams of an economically sound, industrially strong, fully prepared America!

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UNIT PRICES BID BY CONTRACTORS

San Jacinto Dam, Tex.

Contractors competed two ways for the contract to build the San Jacinto River Dam, with intake and 72" reinforced concrete conduits. The dam is to be an Ambursen type reinforced concrete slab-and-buttress spillway 3,160 feet long and 47 feet high with embankments at each end. Ambursen Engineering Corp. of New York and Houston, holders of the patents are consulting engineers. G. L. Fugate is the city of Houston's chief engineer.

The City of Houston awarded the contract on proposal A, December 11, 1951 for $6,216,295.40 to low bidder San Jacinto Equipment Company and Elmer C. Gardner, Inc. of Houston. This is just under the engineer's estimate of $6,379,833. It is also below alternate proposal B under which contractors would furnish and place dumped riprap and be allowed deductions on five items.

The City received a Controlled Materials Plan allotment which enabled it to furnish contractors with these $1,985,769 scarce steel items: reinforcing steel, cut and bent; all steel sheet piling; 2 Tainter gates and 2 steel flashboards, fully fabricated; 4 complete gate hoists with motors; 3 sluice gates and operating mechanisms with fabricated steel racks; all pipe rail, completely fabricated; completely fabricated steel foot bridge; all miscellaneous and structural steel items required for dam intake tower and conduits, completely fabricated.

The job is 5.6 miles from the Southern Pacific main line. Work started January 18 to be completed in two years. Liquidated damages are $400 per day. Minimum hourly wage rates range from $0.80-1.10 for common laborers and from $1.25-2.00 for skilled workers.

Bidders include:

1C	San Jacinto Equip Co & Elmer C. Gardner, Houston, Texas	$6,216,295.40A 6,398,765.40B
2	Farnsworth & Chambers, Inc., Houston	6,403,488.50A 6,557,848.50B
6	Johnson, Drake & Piper, Inc. & Fegles Construction Co., Minneapolis, Minn.	9,716,283.50A 9,791,933.50B

Bids: 12-11-51 Items	Unit	Quantity	Unit prices 1 C	2
Access Road	ls		$130,332	$5,305
Oyster shell surfacing	cy	2,050	2.76	6.00
Clearing	ac	20	1,179.50	200.00
Grubbing	ac	10	120.00	450.00
Stripping	cy	79,700	0.70	0.35
Exc, core trench	cy	45,500	0.61	0.25
Exc, general	cy	861,120	0.51	1.00
Trench, & finish exc	cy	49,700	2.32	3.00
Backfill, structural	cy	17,990	1.00	1.00
Embankments, impervious	cy	363,300	0.53	0.75
pervious	cy	755,000	0.27	0.10
unclassified	cy	247,000	0.20	0.25
Extra rolling	roll hr	1,000	15.00	8.00
Top soil	cy	12,400	1.70	0.55
Fertilizer	t	2.5	100.00	90.00
Sodding	ac	12	1,050.00	1,000.00
Gravel fill for embank	cy	38,000	3.13	6.00
Sand & grav fill for drns	cy	740	21.00	14.00
Rockfill dumped in place	cy	3,200	9.50	10.50
stockpiled	cy	500	9.50	10.75
Bids: 12-13-52 Items	Unit	Quantity	Unit prices 1 C	2
Timber diversion crib	ls		16,000.00	15,000.00
Pl steel sheet-piling	t	6,500	16.00	30.00
Cut holes in stl sht-piles	no	1,000	0.46	1.25
Cut steel sheet-piles	no	2,500	1.60	1.75
Splice stl sht-pil horiz	no	300	9.45	4.00
vertically	lf	1,000	4.75	2.50
Fabr stl sht-pile pieces	no	300	3.75	4.00
Fabr stl sheet-pile tees	lf	300	6.70	6.25
Conc: foundation floors	cy	26,890	21.85	20.00
spillway hearth	cy	25,170	16.67	22.00
suppl stilling pool	cy	1,240	25.70	25.00
baffle bicks & split piers	cy	400	30.20	35.00
low flow dschrg can pav	cy	2,610	21.30	20.50
slope & dike pav for low flow discharge canal	cy	2,100	23.00	22.50
spillway buttresses 8 to 158, & 164	cy	21,850	35.00	43.25
spillway pier buttresses 159-163	cy	1,400	46.60	45.00
bulkhead buttresses	cy	2,700	36.85	35.00
spillwy & blkhead deck	cy	15,080	36.90	29.00
tainter gate spillwy crests & aprons	cy	130	42.50	41.00
slotted spillwy crests	cy	5,575	56.00	40.00
segment B of abutments	cy	588	57.00	43.00
abut retaining walls	cy	2,935	32.00	30.00
corewll & diaphrgm wll	cy	800	45.00	50.00
beams	cy	17	143.00	100.00
gate oper bridges	cy	53	75.00	90.00
blkhd walkwys & parapt	cy	200	90.00	110.00
abut struct intake brdg	cy	157	195.00	85.00
embankment paving	cy	15,700	22.62	23.00
embank parapets & crest paving	cy	1,820	33.00	31.50
class C fill	cy	300	22.00	14.50
Pl reinforcing steel	lb	14,215,000	0.0246	0.025
Cutting reinforc steel	lb	10,000	0.02	0.01
Bending reinforc steel	lb	10,000	0.02	0.015
Install 725 pile-wll anchrs	ls		850.00	115.00
miscellaneous steel	ls		1,900.00	1,500.00
3 sluice gts & oper mech	ls		730.00	300.00
pipe handrail	ls		580.00	700.00
168 inspect open assemb	ls		370.00	275.00
Assemb, install & paint 2 tainter gates	ls		6,250.00	12,750.00
2 hinged flashboards	ls		1,200.00	1,200.00
steel bridge	ls		800.00	1,000.00
Install 4 crest gt hsts	ls		1,700.00	2,500.00
Electrical work	ls		11,300.00	14,250.00
Copper water seals	lb	3,600	2.00	3.25
Premold jnt fill ½" thick	sf	250	0.40	0.20
1" thick	sf	15,500	0.45	0.30
¾" thick	sf	4,500	0.60	0.40
Coal-tar mastick surface 1.8" thick	sf	130,000	0.55	0.65
Coal-tar painting	sf	12,500	0.07	0.05
Monolith conc cond compl	lf	1,150	228.52	165.00
Intake tower complete	ls		69,000	66,722

Proposal B Items	Unit	Quantity	Unit prices 1	2
F&p dumped riprap	t	85,000	$ 8.32	7.93
Deductions: grav fill for embank	cy	10,000	$ 13	6.00
rockfill dumped in pl	cy	1,500	9.50	10.50
embankment paving	cy	15,000	22.62	23.00
embank parapt & crst pav	cy	760	33.00	31.50
pl reinforcing steel	lb	3,000,000	0.0246	0.025

Test drilling, Idaho

The Bureau of Reclamation on December 13 awarded Lynch Bros. of Seattle contract for $19,095 for drilling drainage holes on the Black Canyon Dam, Boise project, Idaho. This is 42% below the engineer's estimate.

The drainage and angle drainage holes, spaced at 10 foot centers, will be core drilled, 30 feet from the floor of the drainage galleries and 20 degrees from the downstream face of the dam through concrete into foundation rock. For holes more than 130 feet deep, the contractor will be paid at a rate to be agreed upon with the contracting offices.

Bidders include:

1C	Lynch Bros., Seattle, Wash	$19,095
2	R. S. McClintock, Spokane, Wash	20,100
8	Harold P. Doty, Garden City, Kan	82,678

Bids: 12-13-51 Items	Unit	Quantity	Unit prices 1C	2
Drill drng holes from gallery	lf	1,850	$5.70	$6.00
Drill drng holes from dwnstrm face of dam	lf	1,500	5.70	6.00

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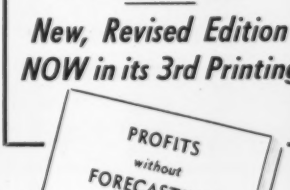

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Trade dispute board may fold

The construction industry machinery for settling jurisdictional disputes without strikes is threatened—again—with collapse.

This is not the first time a possible breakup has developed since the plan went into effect on May 1, 1948, as a means of avoiding use of the Taft-Hartley labor law in settling work jurisdiction issues in construction projects. This time the crisis is more serious, although the plan will likely survive in some less-effective form.

The current crisis arises from the fact that three organizations have formally withdrawn from the National Joint Board, the tripartite agency set up by contractors and the AFL Building Trades Dept.'s 19 affiliated unions to decide questions of work jurisdiction. They are the National Association of Electrical Contractors, the AFL International Brotherhood of Electrical Workers and the National Association of Master Plumbers. They have not recognized the National Joint Board or its decisions since Jan. 1.

Discussions are in progress in an attempt to heal the breach and keep the plan alive. It is possible that some concessions may bring NECA and the IBEW—the major dissidents—back under the plan. Otherwise, there is likely to be serious jurisdictional trouble between the IBEW and the AFL operating engineers, particularly on powerline construction.

NECA and IBEW have long complained that National Joint Board decisions have favored general contractors and the unions they deal with at the expense of subcontractors and their unions. (This is partly the cause of the defection of the Master Plumbers.)

• **Main trouble**—Crux of the issue is a decision that Operating Engineers, rather than IBEW, have jurisdiction over the operation of winches on powerline trucks. NECA says this requires the hiring of an operating engineer to spend ten minutes to start and stop a mechanical winch. The general contractor representatives on the joint board, it is alleged, have ganged up on the specialty contractors by favoring decisions which help operating engineers and other crafts which are employed by general contractors.

A question also arises as to the status of IBEW in the AFL Building Trades Dept. The pact was signed by the Building Trades Dept. in behalf of all affiliated unions and committing all the unions to a majority decision of the department. Last month, the AFL building trades executive council voted 16 to 1 (IBEW dissenting) against IBEW's withdrawal from the plan.

It appears that the IBEW would have to pull out of the building trades, although not out of the AFL. Yet, the IBEW executive council, in deciding to give notice of quitting the joint board, said this did not mean withdrawal from the building trades group.

The National Joint Board was created with John T. Dunlop, Harvard professor and labor troubleshooter for the White House, as impartial chairman. The AFL Building Trades Dept., Associated General Contractors and seven specialty subcontractors joined in it. Objective is to keep the government from issuing Taft-Hartley injunctions against jurisdictional strike or deciding jurisdictional questions by settling these problems within the industry. Decisions are made by Dunlop and a neutral contractor and AFL representative.

Strikes show increase

Jurisdictional strikes have been increasing, despite the peace plan in the construction industry, where most of them occur. Many have occurred on vital atomic energy construction. The increasing trend reported by contractors is supported by strike figures of the Bureau of Labor Statistics, although the figures have been challenged by Dunlop as an accurate measure of the real situation.

BLS shows this trend in strikes over work jurisdiction since the war:

	No. of strikes	Workers involved	Man-hours lost
1946	50	16,900	110,000
1947	62	9,160	628,000
1948	35	4,250	27,200
1949	74	20,300	143,000
1950	123	24,900	188,000
First half 1951[1]	67	21,300	120,000

[1] Preliminary.

(Note: The best record was made in 1948, the first year plan was in effect. Since then, the trend has been upward every year in every category.)

• **Gains cited**—The industry has been successful in keeping Taft-Hartley at arm's length. The National Labor Relations Board, in a recent decision involving a dispute between carpenters and laborers, refused a demand of Manhattan Construction Co. that it invoke the Taft-Hartley law to decide the dispute. NLRB said the issue was before the industry's joint board—under an agreement which included the contractor—and that Taft-Hartley could be invoked only when other procedures for settling jurisdictional disputes were lacking.

If the withdrawal of NECA, IBEW and Master Plumbers sticks, then any jurisdictional dispute involving them may be taken to NLRB under Taft-Hartley.

Disagreement over the joint board plan began early. IBEW opposed it from the begining, making an argument it has since repeated—that it helps make the labor-hated Taft-Hartley work in the construction industry. The 1948 IBEW convention authorized President Dan W. Tracy to pull the union out of the plan if it became necessary "to protect the interests" of IBEW.

In 1949, the AFL Building Trades Dept. itself notified the contractors it was abandoning the plan, charging that contractors were bringing too many disputes before the joint board and were utilizing the plan to their own advantage. This was patched up, however through some procedural changes, and the plan remained in existence. But the IBEW remained dissatisfied, and in December gave 30-day notice of withdrawal, effective Dec. 31. IBEW's executive council charged:

"The general contractors, as usual, wanted to control the disputed work for themselves—for the unions working direct for them, not for the subcontractors. The inevitable happened. The sub-contractors and the unions (such as ours) working for them fared badly."

Even so, the agreement was renewed last month by the building trades, AGC and other contractor associations, to run until March 31, 1953.

Officers of the joint board, besides Chairman Dunlop, are Richard J. Gray, president of the AFL Building Trades, treasurer, and James D. Marshall of AGC, secretary. AFL members, besides Gray, are M. A. Hutchinson, president of the Carpenters; Frank Bonadio, of the Sheet Metal Workers, and H. P. Wharton, of the Operating

Engineers. Contractor representatives, besides Gray, are H. R. Cole of the Tile Contractors; R. J. Mitchell of AGC, and W. J. Cour of NECA.

Court okays picketing ban against 56 Texas unions

The Third Court of Civil Appeals, Austin, Tex., upheld but modified a far-reaching injunction to prevent 56 Texas unions from unlawfully picketing Brown & Root, Inc., the big Houston construction firm. While the appellate court held picketing for lawful purposes cannot be prohibited, its decision otherwise affirmed the temporary injunctions granted nearly two years ago by Judge Charles O. Betts in the suit brought by Brown & Root charging that the unions were trying to destroy the company by forcing boycotts on its business.

The trial court's order had prohibited picketing of the firm except on modification by the courts of the order. The appellate court modified this provision to prohibit unlawful picketing "hereto specified," and permitted peaceful picketing at proper places for lawful purposes.

Both sides appeared satisfied with the decision and indicated there might not be an effort to appeal.

Nat Wells, attorney for the Texas State Federation of Labor and the defendant locals, said that the appellate court had modified the trial court's judgment in the manner the union desired. He is quoted as saying, "Judge Betts had said we had to come back and get approval from his court before we could picket anywhere. This court says we can go out tomorrow and picket in protest of unfair wages."

Nevertheless the appellate court agreed with the trial court that the unions had violated laws forbidding "coercive" secondary boycott and forbidding conspiracies to force an employer to use a closed shop.

Further the court ruled "We find no evidence that appellate (Brown & Root) is engaged in a campaign to flout the labor laws or to destroy labor organizations."

The court ruled that affiliates of the local unions—the trades councils in the area, the state federation of labor, the internationals, and the AFL—were also guilty because they furnished encouragement and aid to the locals.

The decision was issued as a joint opinion of all three judges. It is subjected to appeal to the state Supreme Court.

The court ruled that Brown & Root was not required to go to the National Labor Relations Board for relief as the unions contended.

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Contractors eye foreign steel imports

Foreign steel imports have jumped more than five times over the pre-Korea normal, but U. S. builders and steelmen are agreed that the net effect on the U. S. steel shortage will be small.

That five-times jump brings the total steel importations (including alloys and raw material) to roughly 2.5 million tons in 1951. Of the total, only about 435,000 tons was in what U. S. agencies call unfinished structurals, 140,500 tons was in concrete reinforcing bars and 4,000 tons was in fabricated structural shapes.

• **Effects**—There is no doubt, however, that the inflow of foreign steel will have a limited beneficial effect on construction.

Evidence of what that effect may be is contained in proposed changes in housing regulations and CMP Reg. 6 that U. S. fabricators and contractors may obtain foreign structural steel and use it without counting the amount so obtained—as now required—as part of their quarterly allotments.

Most European bars have been used directly—largely for highway work.

• **Not as good as it looks**—The reason for the dubious looks U. S. contractors and steelmen throw at the foreign steel divides itself like this:

1. Without exception, the foreign steels are Bessemer-grade, as opposed to the almost universal open-hearth steels produced in the United States. That means that the steels contain more than the normal U. S. content of sulfur and phosphates, and are therefore considered to be more brittle, not so easy to use in welding. (Steelmen admitted, however, that the Bessemer-grade steels could be made to meet U. S. A7 requirements—tensile strength between 60,000 and 70,000 lb, minimum yield-point at 33,000 lb).

2. Because the market for foreign steels in the U. S. has been small, most European producers continue to produce their rolled shapes to metric—rather than U. S.—measurements. This difference in size throws out standard tables for computing strength of the members, requires considerable recalculation.

3. Control of quality of steels from European countries has been far from uniform—shapes and bars from the same mills often vary greatly in chemical content.

4. Prices are high. Despite the complicated formulas set up for pricing foreign steels, so much depends on delivery point, shipping charges, previous prices, etc., that foreign steels in general cost about double per ton what comparable U. S. steels cost.

Although U. S. government indexes lump the aforementioned 35,000 tons as structural, a further breakdown indicates that a good part of these steels are angles and smaller shapes—and a great deal of the total, in fact, doesn't even get to construction use. Like a lot of U. S.-produced "structurals" (some 5 million tons), a good deal of it goes to machinery manufacturers and others, turns up as farm implements and the like.

• **Where it's from**—A breakdown of imports of steel from foreign countries, supplied by NPA shows these tonnages, for the first 11 months of 1951:

Belgium and Luxembourg—60,000 tons of bars; 235,000 tons of unfinished structural shapes; France—26,000 tons of bars, 120,000 tons of shapes; Western Germany—30,000 tons of bars, 15,000 tons of shapes; United Kingdom, 3,000 tons of bars, 22,000 tons of shapes. Japan supplied 220 tons of bars, no shapes; Sweden, no bars, 10 tons of shapes; Canada, 600 tons of shapes, 21 tons of bars.

Housing investigation turns up shoddy ones

The House Banking subcommittee, headed by Rep. Albert Rains, heard verbal complaints, read written complaints, and at least once filled its hands with chunks of deteriorating lumber during hearings it is conducting on housing financed with government-insured loans.

The Rains group is investigating the inspection system and the specification standards of the Federal Housing Administration and the Veterans Administration. The subcommittee invited complaints about substandard construction.

The FHA and the VA informed the subcommittee that their function is to guarantee lenders against loss on long-term housing mortgages. Both agencies stressed that only a small percentage of the houses with which they have been connected are the subjects of current complaints.

• **The complaints**—So far the committee has received a wide variety of complaints . . . Alabama—House built on old lake bed. Lake sometimes comes back . . . Texas—Floor sagging, roof leaking . . . Texas—Bathtub not connected to sewer . . . New Jersey—No stairway to cellar, had to cut hole in closet floor to enter cellar . . . New York—Cement cellar floor only one inch thick . . . Florida—Sewage flowing into backyard . . . New Jersey—Faulty oil burners . . . and from all states—crumbling foundations, badly fitted doors and windows, and wet cellars.

• **The remedies**—The committee discussed and heard the following recommendations for preventing these construction faults from recurring:

1. License builders.
2. Better engineering before construction.
3. Raise minimum standards even if it raises the price.
4. Government-backed standard contract between builder and buyer.
5. Eliminate fee inspectors and make all inspectors U. S. employees.
6. Black-list builders with bad records.
7. Surety bond or warranty by builder to assure reimbursement to buyer for faulty construction.

Camp Ritchie controversy goes to comptroller

The mixup over contracts for construction of facilities at the Defense Department's Camp Ritchie (ENR Jan. 31, p. 60) has now been forwarded to the U. S. Comptroller General for final solution.

Three weeks ago, it was reported that a $6.6 million contract for the work (housing, officers quarters, recreational facilities) held by John McShain Co., had been cancelled by the Army after criticism by Congress of the plush aspects of the construction work.

The reports at that time were that the original second low bidder—John A. Johnson Co.—would get the contract. This did not prove to be the case and the decision has now been left to the Comptroller General.

Backlog remains steady

ENGINEERING NEWS-RECORD's backlog of proposed construction shows only minor changes in principal categories during the month of January.

Through Jan. 31, the backlog stands at $62,528 million, compared to $62,147 million a month ago.

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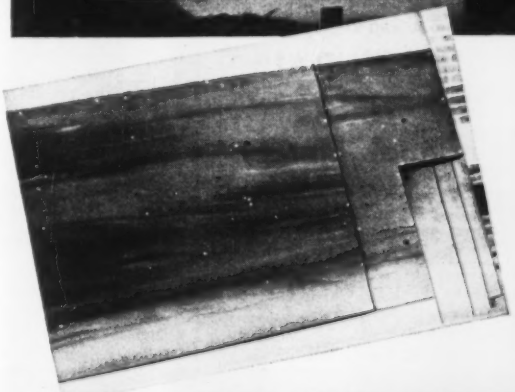

Note the snap-shot of one of the forms for the hospital job. The sharp edges and smooth surfaces, the cleanness of the holes for the form ties, tell the story . . . The foundation job was done with two pourings; no vibrator was used. The smooth, fin-free surfaces mean important savings in finishing costs.

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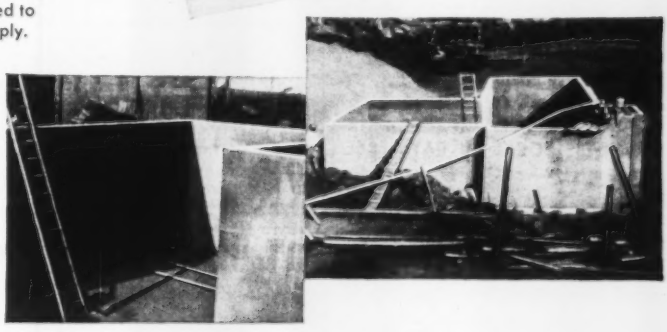

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FINANCE

Market tight for insured loans, but "conventionals" are in demand

Mortgage money for FHA-insured and VA-guaranteed loans at 4¼ and 4% is hard to get in most places today—despite the large increase in funds available for lending. Conventional mortgages, by contrast, are generally easy to finance at 4½ to 5%.

A step-up in permissible rates by the government agencies as advocated by many mortgage lenders, would correct the immediate difficulty. In fact, it might quickly develop into competitive bidding for FHA and VA mortgages.

Because of the ample supply of investment money and prospects for the next few months, FHA and VA see no compelling reason for raising rates in the present situation. They find support for their wait-and-see policy among lending groups.

• **Money available**—Funds seeking investment outlets continue to grow. During 1951, for example, building and loan associations had a net gain in savings capital of about $2 billion, topping each of the two preceding years by $500 million.

Mutual savings banks likewise had a large increase in deposits during the last year; their net inflow of savings in 1951 amounted to $876 million. In the current year, the net inflow is likely to rise to $1 billion.

And savings banks are shifting to mortgages. During 1951, the percentage of their assets in mortgage holdings rose from 36% to 42%, representing an increase of $1.7 billion. Government bond holdings declined in the same year from 48% to 42%, a decrease of $1.1 billion.

Heavier investment in mortgages may well result from the 1951 tax law, which imposes a corporation-rate income tax on reserves in excess of 12%. The law applies both to mutual savings banks and to building and loan associations. Very few of the building and loan associations have reserves of as much as 12%. The effect will be more marked in the savings banks. They can be expected to transfer funds out of their reserves—partly by selling government bonds and putting the money into mortgages.

• **Mortgage market aided**—Increased funds of building and loan associations and savings banks can be counted upon to help the mortgage market. Insurance companies also had a net growth of assets in 1951 amounting to some $4 billion to $5 billion, but the flexible, diversified investment policies of the insurance companies make it difficult to estimate their mortgage activity. Commercial banks can be expected to maintain a steady level of mortgage buying.

Combined purchasing by all these investors should produce an easier market, it is felt. By July, some of them think, there may even be some competition for the 4¼ and 4% loans.

Current complaints about loan difficulties are partly the result of the December money situation, according to some observers. Before the year end, the whole money market was tight, rates on short-term commercial loans were increased, and banks built up their cash holdings.

But other experienced market students point to the increasing attractiveness of corporate offerings. The surplus profits tax makes it profitable for many corporations to borrow money on high-yield bonds—up to 3¼%. These observers expect more issues of this kind, making strong competition for investment funds. Among the principal mortgage investors, only the building and loan associations would have to put their money into real estate loans.

• **Defense housing problems**—Home builders have pointed to difficulties of financing FHA loans for programmed housing in critical defense areas as an example of the present tight condition of the market. But other housing people regard these areas as special problems—not truly indicative of the general situation. The high cost of writing and servicing loans in isolated areas—and the difficulty of finding local institutions to service them—are deterrents to making such loans. There is a question, too, of the future stability of the population in some of these places, but insurance of the loans would protect the investor on that point.

Fewer housing units will be started this year than last, it is generally agreed. But mortgage money, even so, will continue t be a far greater prob-

lem than materials to builders, some observers predict. Corporation bonds will have the advantage over FHA and VA loans at present rates they say.

Congress may stimulate some private financing by making additional funds available for direct VA loans. But those funds won't be large—maybe $25 million a quarter—according to present indications. VA may help the GI market a little by allowing the builder to absorb a discount on the loan from the original mortgagee. These aids could provide a pickup for VA loans, but it might not be enough.

Eight cities plan test of redevelopment law

Representatives of eight Ohio cities are planning a test this spring of the Ohio urban redevelopment law. A test in the Ohio Supreme Court will be necessary before municipalities can issue bonds acceptable to underwriters to finance the purchase and clearance of lands for redevelopment programs.

One provision of the state law is a requirement that families displaced by slum clearance projects must be relocated by the cities.

• **Double test**—Actually two tests are planned. The first action will be brought in Cleveland in a friendly mandamus suit. This case will be ready for submission to the courts sometime this spring. Meanwhile, the group plans to have one of the other cities enact, through its city council, a local urban redevelopment law which also will be tested in the courts.

• **"Almost unworkable"**—The state redevelopment law was called "almost unworkable" by Charles A. Stamm, assistant to Cincinnati's city manager.

Among the provisions most criticized in the law are these:

The law requires cities to pay moving expenses of relocated families. And, under the law it is mandatory for a city to have a redevelopment plan before it can issue bonds. Bonds may be issued only for a specific project, thereby prohibiting the use of bond funds for an over-all redevelopment program.

New financing technique aids public projects

A new financing technique has been used by Tennessee cities that have reached their bonded debt limits. The method has been employed with good results to finance construction of schools, fire houses, city halls and similar projects.

(*Continued on next page*)

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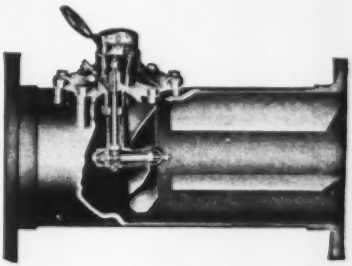

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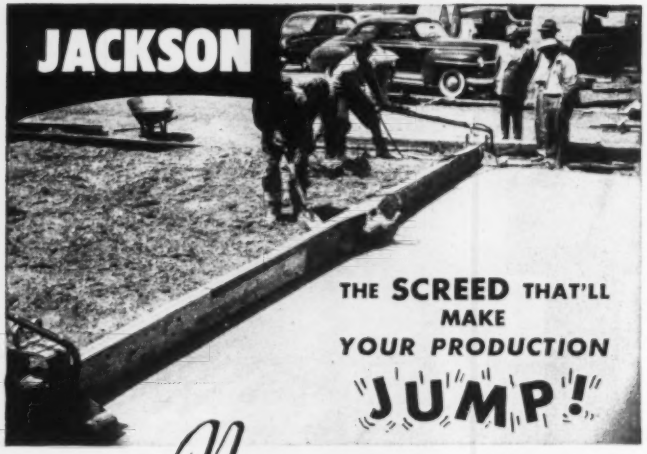

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Finance . . .

The technique, called the "lease-purchase" method, works this way:

A town or county government draws up specifications for the public works facility it wants to build. The specifications are turned over to a private company with suitable financial backing. The company constructs the building, then leases it back to the local unit of government for an annual or monthly rental fee.

The rental is determined by the cost of servicing the debt incurred in construction of the building. At the end of the stipulated lease period—when the construction cost has been liquidated—title to the building is turned over the government unit without further payments.

• **"Carefree lease"**—A variation of this technique is the "carefree lease", whereby the company is freed from the maintenance, repairs, taxes and insurance costs of the new facility so that the amount received in rents is net to the company.

The Tennessee State Planning Commission cites as an example Whiteville, North Carolina, which wanted to build a city hall.

A non-profit corporation was created to construct the building and the city leased it from the corporation. A local savings and loan association put up the money. The city pays $371 a month rent, and subleases space to other agencies for $470 a month. In 10 years, the city will own the building.

Finance briefs . . .

• **Bond law upheld**—Clearing the way for the construction of millions of dollars worth of new school buildings in several Chicago suburbs and other Illinois school districts, the Illinois Supreme Court has upheld the validity of a 1951 school election law covering bond issues for school construction.

• **Tax exemptions**—A bill to provide 10-year tax exemptions for new industries was introduced in the Mississippi legislature in line with Governor White's program for industrial expansion.

• **School aid**—A series of bills signed by Governor Fine, of Pennsylvania may aid construction of 14 school buildings costing $16 million. The new legislation permits the present school districts to form authorities to finance new construction. It also allows school boards to increase school taxes five mills beyond the present legal limits.

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

ELSIE EAVES, Manager — *J. A. MAHONEY, Reports* — *M. R. ROESSLER, Statistics*

NEW ENGLAND

BIDS ASKED—BUILDINGS

▲ **Mass., Boston**—NURSES HOME—B.A. 2/27—At office, Coolidge, Shepley, Bulfinch & Abbott, archts., 1 Court St., (selected list bidders) 8 story, bsmnt., 46x110 ft. nurses home, Blossom St., for Massachusetts General Hospital, Fruit St. $1,500,000. CD 2/20/51.

▲ **Mass., Norfolk**—PRISON—B.A. 3/14—State, Dpt. Correction, State House, Boston, P-104 Contr. 3, state prison, $6,000,000, Desmond & Lord, 6 Beacon St., Boston, archts. CD 2/20/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Makin Sand & Concrete Products Co., 340 Main St., Greenfield, Mass. LB $134,515, est. $126,000, single span steel stringer bridge with concrete deck and approaches, Pittsfield;

Charles Callahan Co., 69 Ziegler St., Roxbury, Mass. LB $100,722, est. $99,000, reconstr. bridge and approaches over Mumford River, Uxbridge. Bids Feb. 5. CD 1/23.

BUILDINGS

LOW BIDS AND CONTRACTS

C. A. Dodge Co., Albany St., Cambridge, Mass. LB $400,000, research and development LABORATORY, NATICK, MASS., Workshop Assoc., Inc. 135 Crescent Rd., Needham, Mass. Bids Jan. 17. CD 1/8.

MIDDLE ATLANTIC

BIDS ASKED—BUILDINGS

▲ **D. C., Wash.**—HOUSING—2/26—National Capitol Housing Auth., 1728 L St., N.W., Wash. 25, D. C., Richards Dwelling. Plans deposit $30. Extended date. CD 1/21.

Md., Towson—SCHOOL—B.A. 2/26—Bd. Educ., Baltimore Co., Aigburth Rd., Rodgers Forge Elementary School addn. $350,000. Plans deposit $50. Gaudreau & Gaudreau, 324 N. Charles St., Baltimore, archts.

Pa., Monongahela—HOSPITAL—B.A. 2/26—Monongahela Memorial Hospital, Monongahela, 4 story bsmnt., 3 story bsmnt., brick, concrete, steel hospital addns. $650,000. McMullen, Pringle, Schwem & McMullen, 219 9th St., Pittsburgh, archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

NEW JERSEY—State Hy. Dpt., Trenton,

Bucks County Construction Co., Penndel, Pa., LB, $148,429, constr. 1.312 mi. Pittstown-Everittstown Rd., Sect., 2 from Neilsons Corner to Everittstown, Alexandria Twp., Hunterdon Co. Bids Jan. 29. CD 1/10.

NEW JERSEY—State Hy. Dpt., Trenton,

A. J. Santaniello, 10 Whyte St., Jersey City, N. J., CA $90,975, constr. Route 6, Sect. 31 from Irondale Rd. to Main St., Mine Hill Twp., Morris Co. Bids Jan. 29, awarded Feb 1. CD 1/10.

Bass Constr. Co., Birmingham Theater Bldg., Birmingham, Mich., $237,450, installation and construction Bryant Pumping Station, ED 2e1-434-13, WASH, D. C. Dist. of Columbia, Sanitary Eng., 14 and E Sts. N. W., Wash. 4, D. C. Bids Jan. 7. CD 12/17

BUILDINGS

LOW BIDS AND CONTRACTS

Raneri Bros., 649 Logan Ave., New York, N. Y. Owner Builds. Approx. $378,000. 36 one family HOUSES, Schley Ave., Pennyfield Ave., and Mullen Pl., NEW YORK, N. Y. Elias K. Herzog, 258 Broadway, New York, N. Y., archt.

† **U. S. Eng.**, 24 St. and Maryland Ave., P. O. Box 1715, Baltimore 3, Md., cancelled; bids to have been opened Jan. 24. WAREHOUSES (4 G.S.A.) 1 story, 100x1,000 ft., concrete and frame constr., Letterkenny Ordnance Depot, Serial No. ENG 18-020-52-22, CHAMBERSBURG, PA.

▲ **General State Auth.**, 18 and Herr Sts., Harrisburg, Pa. rejected bids Dec. 19, general construction Mercy-Douglass HOSPITAL, 50 and Woodland Sts. LB $1,887,000, heating constr. LB $426,000, PHILA., PA. CD 12/27, under LB.

▲ **Mullan Contg. Co.**, 3945 Greenmount Ave., Baltimore, Md. LB $1,600,000. 1 story, 300x600 ft., brick, 1,300,000 cu. ft. ADMISSION BLDG., MH-C-49-03, CROWNSVILLE, MD. State, Dpt. P. Improv., 506 Park Ave., Baltimore, Md. Bids Feb. 7. CD 1/25.

▲ **J. Roland Dashiells & Sons**, Salisbury, Md. CA $1,577,710. Junior-Senior High SCHOOL, SALISBURY, MD. Bd. Educ., Wicomico Co., Salisbury, Md. Jos. Posey & Assoc., 10 E. Pleasant St., Baltimore, Md., archts.

W. M. Chappell, 813 4 St. N. E., Wash., D. C., CA, $434,600 Adelaide Davis SCHOOL addn., WASH., D. C. Dist. of Columbia, Dir. of Construct., 14 and E Sts. N. W., Wash. 4, D. C. Bids Jan 8, awarded Jan. 21. CD 1/21, under LB.

J. D. Hedin Constr. Co., 2900 Newton St. N. E., Wash., D. C., CA, $794,000, Hugh M. Browne Junior High SCHOOL addn. WASH., D. C. Dist. of Columbia, 14 and E. Sts. N. W., Wash 4, D. C. Bids Jan. 10, awarded Jan. 14. CD 1/21, under LB.

John Tester & Son, 1620 2 St. S. W., Wash., D. C., LB, $497,711, Payne SCHOOL addn., WASH., D. C. Dist. of Columbia, Dir. of Construction, 14 and E Sts. N. W., Wash. 4, D. C. Bids Feb. 5. CD 1/21.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

† **Va., Norfolk**—B.A. 2/26—Pub. Wks. Office, Headquarters Fifth Naval Dist., U. S. Naval Base, Zone 1, repairing roads and sidewalks at U. S. Naval Base, (Craney Island Fueld facility), NOY 71041, Spec. 32828. Plans deposit $10.

† **W. Va., Pinto**—BOILER HOUSE—B.A. 2/26—Dist. P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk, 11, Va., boiler house addn. at Allegany Ballistics Laboratory, Spec. 32845. Plans deposit $10.

BIDS ASKED—BUILDINGS

Ala., Boston—HOUSING—B.A. 2/26—Boston Housing Auth., Boston, housing, Project ALA 74-1.

Ala., Winfield—HOUSING—B.A. 2/27—Winfield Housing Auth., Winfield, housing, Project Ala. 58-1. CD 4/5.

Ala., Collinsville—HOUSING—B.A. 2/28—Collinsville Housing Auth., Collinsville, Ala., housing, Project Ala 83-1.

Ala., Columbiana—HOUSING—B.A. 2/28—Columbiana Housing Auth., Columbiana, housing, Project ALA 72-2.

Ala., Hartselle—HOUSING—B.A. 2/28—Hartselle Housing Auth., Hartselle, 48 unit housing, Project Ala 87-1. Plans deposit $40. Extended date. Turner & Northington Medical Arts Bldg., Florence, archts. CD 1/28.

Tenn., Camden—SCHOOL—B.A. 2/28—Benton Co. Bd. Educ., Camden, school. Approx. $300,000. Plans deposit $300. Howard, Hickerson & Jordan, Inc., 304½ 3rd Ave. N., Nashville, archt. CD 10/12.

Tenn., Murfreesboro—HOUSING—B.A. 2/28—Murfreesboro Housing Auth., 203 Masonic Bldg., housing, Project: Tenn 20-1 and 20-2. Plans deposit $25. CD 9/18.

Tenn., Memphis — HOUSING — B.A. 2/29 — Memphis Housing Auth., 264 N. Lauderdale St., 450 units housing, Proj. Tenn. 1-6. Bid date changed. CD 1/14.

Ga., Baxley — HOUSING — B.A. 3/3 — Baxley Housing Auth., Baxley, housing, Projects GA 71-3 and GA-71-4. CD 1/21.

Ga., Sugar Hill — HOUSING — B.A. 3/4 — Sugar Hill Housing Auth., Sugar Hill, housing, Project GA 91-5.

Ga., Villa Rica—HOUSING—B.A. 3/4—Villa Rica Housing Auth., Villa Rica, housing, Projects GA 107-1 and GA 107-2. CD 5/4.

Ala., Vernon—HOUSING—B.A. 3/5—Vernon Housing Auth., Vernon, housing, Projects ALA 84-1 and ALA 84-2.

▲ **La., New Iberia**—HOUSING—B.A. 3/6—New Iberia Housing Auth., 76 dwelling units, LA 27-1, $500,000; 94 housing units, LA 27-2, $630,000. A. Hays Town, Masonic Bldg., Baton Rouge, archt. CD 2/6.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NORTH CAROLINA**—State Hy. & Pub. Wks. Comm., Raleigh,

Gilbert Eng. Co., Statesville, N. C. CA, $529,983, est. $400,000-$500,000, grading 17.58 mi. Proj. 6559, F-680 (9), F-680 (10), F-680 (11), Mecklenburg and Union Counties;

H. F. Ramsey Co. Inc., Asheville, N. C., CA, $510,680, est. $400,000-$500,000, traffic bound macad., bit. surf. tr. 10.7 mi. Proj. 816-2, F-348 (2), Burke Co. Bids Jan. 29, awarded Feb. 7. CD 2/1, under LB.

Propst Constr. Co., Concord, N. C., CA, $149,230, WW improv., LANDIS, N. C., Town, Landis, N. C. (Correction—contractor). CD 1/30, under CA.

▲† **Atlantic, Gulf & Pacific Co.**, 15 Park Row, New York, N. Y., CA, $1,145,660, dredging Boca Chica Field and Naval Base, NOY 70678, KEYWEST, FLA., Dist. P. Wks. Office, Box 465, Naval Base, S. C. Bids Jan. 24. CD 2/5, under LB.

ALABAMA—State Hy. Dpt., Montgomery,

L. J. Cousins, 18 S. Lewis St., Montgomery, Ala., CA $129,104, grading, paving, etc. 7.645 mi. Clanton Enterprise Rd., Proposal A. FA S-538 (1), Chilton Co. Bids Jan. 11. CD 1/24, under LB.

▲ **Westinghouse Electric Co.**, Union Bank Bldg., Pittsburgh, Pa., CA, $383,000, mfg. 18,000 kw. capacity generator.

Fegles Constr. Co., 711 Wesley Temple Bldg., Minneapolis, Minn., CA, $689,000, installing generator at Dale Hollow Power Plant, Inv. 52-18, Clay Co., TENNESSEE. U. S. Eng., 303 U. S. Court House, Nashville 1, Tenn. Bids Jan. 8. CD 1/15, under LB.

Stansell Electric Co., 209 14th Ave. N., Nashville, Tenn., CA, $297,965, electric fire finder sys. at State Hospital for Insane, BOLIVAR, TENN. Tennessee State Dpt. Institutions, State Office Bldg., Nashville, Tenn.

BUILDINGS

LOW BIDS AND CONTRACTS

A. C. Minnix & Sons, 216 C St. N. W., Wash., D. C., CA, $549,153, Claremont Elementary SCHOOL, ARLINGTON, VA. Arlington Public Schools, 2732 Wilson Blvd., Arlington, Va. CD 4/24/51.

† **American Constr. Co.**, 261 Constitution Ave., Wash., D. C., LB $676,400, civilian male and female DORMITORIES at Naval Proving Ground, NOY 70545, DAHLGREN, VA. Potomac River Naval Command, Naval Gun Factory, Wash. 25, D. C. Bids Feb. 6. CD 1/21.

Sharpe & Hamaker, Arlington, Va., CA, $464,518, Herndon HIGH SCHOOL, FAIRFAX, VA. Fairfax Co., Fairfax, Va. Ballau & Justice, 106 E. Cary St., Richmond, Va., archts. John L. Guest, 113 S. 3 St., Richmond, Va., engr. CD 6/6/50.

Laxton Constr. Co., 127 Brevard Ct., Charlotte, N. C. CA, $581,475, 5 Negro SCHOOL addns., CHARLOTTE, N. C. Mecklenburg Co. Bd. Educ., Court House, 700 E. Trade St., Charlotte, N. C. R. Edwin Wilson, 1370 Briarcreek Rd., Charlotte, N. C. archt. Bids Jan. 31. CD 10/9/50.

Cecil's, Inc., Spartanburg, S. C., LB $305,000. Consolidated SCHOOL, FAIRFOREST, S. C. Spartanburg Co. School Dist. 6, Spartanburg, S. C. Bids Jan. 31. CD 1/9.

R. K. Stewart & Son, High Point, N. C. CA, $562,222, LIBRARY, GREENVILLE, N. C. East Carolina Teachers College, Greenville, N. C. CD 1/28, under LB.

Norman A. Smyth Co., 404½ S. Tryon St., Charlotte, N. C., CA, $632,000, HOUSING units, SALISBURY, N. C. Salisbury Housing Auth., Salisbury, N. C. Bids Feb. 6. CD 1/15.

Jack L. Minor, 2311 Wrightsboro Rd., Augusta, Ga., Owner Builds, $510,000, 55 RESIDENCES, AUGUSTA, GA.

Culpepper & Edwards, Pelham, Ga., CA, $469,900, 70 unit HOUSING Projects GA 98-1 and GA 98-2, PELHAM, GA. Pelham Housing Auth., Pelham, Ga. Bids Feb. 5. CD 1/10.

▲ **Paul Smith Constr. Co.**, 1525 San Marco Blvd., Jacksonville 7, Fla., LB, $370,964, est. $339,850, elementary SCHOOL, Old Augustine Rd. near Dupont High School;

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects invloved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

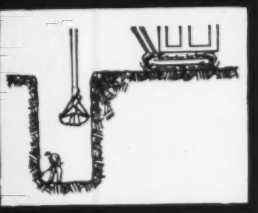
CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

DIFFICULT FOUNDATION WORK



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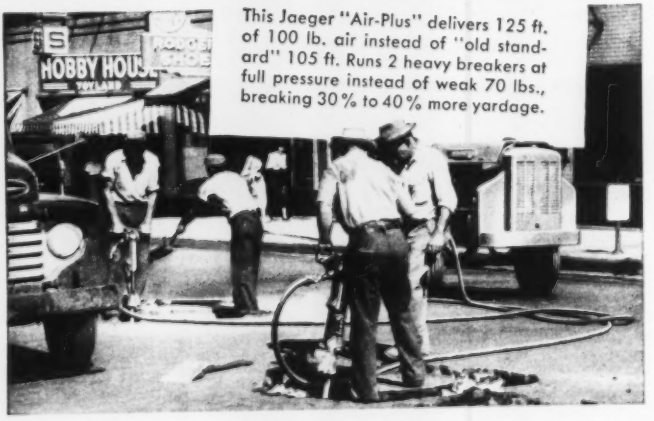

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PUMPS • MIXERS • HOISTS • TRUCK MIXERS • PAVING SPREADERS and FINISHERS

E. C. Kenyon, 4276 Verona Ave. Jacksonville, Fla., LB $364,985, est. $339,850, school bldg. at Love Grove Road on southside of town.

Beerbower & Parker, 561 E. 58 St., Jacksonville, Fla., LB, $315,002, school at San Pablo Jacksonville Beach, JACKSONVILLE, FLA. Duval Co. Bd. P. Instruction, 605 Ocean St., Jacksonville, Fla. Bids Feb. 6. CD 1/24.

Dyson & Co., 806 W. Romans St., St. Petersburg, Fla., CA, $747,400, high SCHOOL, PENSACOLA, FLA. Escambia Co. Bd. P. Instruction, Pensacola, Fla. CD 12/19, under LB.

Building Service Co., West Point, Miss. LB $544,480. HOSPITAL, WEST POINT, MISS. Memorial Hospital Foundation, West Point, Miss. Bids Feb. 5. CD 12/27.

▲ Kaighin & Hughes, Inc., 1080 Atlantic St., Toledo, O. CA $1,300,000, PLANT addns., LOUISVILLE, KY. Frick Co., 320 Broadway, Louisville, Ky.

Hargett Constr. Co., 113 Walton Ave., Lexington, Ky. LB $623,614. 76 DWELLING units, Memorial Park, Ky 18-1; 24 DWELLING units, Tyler Bates Ky 18-2, WINCHESTER, KY. Winchester Housing Comm., Winchester, Ky. James Allen Clark, Winchester, Ky., archt. Bids Jan. 30. CD 1/8.

▲ W. P. Heineken, Inc., 50 Broad St., New York, N. Y. CA. Approx. $1,000,000. Rotary KILN and 2 dryer PLANTS, COLUMBIA, TENN. Shea Chemical Corp., Columbia, Tenn.

Rock City Constr. Co., 135 4th Ave. N., Nashville, Tenn. CA, $842,920, 2 DORMITORIES at State Hospital for Feeble-Minded, DONELSON, TENN. State Purchasing Dpt., State Capitol, Nashville, Tenn. Bids Feb. 5. CD 1/29.

Harmon Constr. Co., 100 S. Indiana St., Oklahoma City, Okla. LB $569,777, HOSPITAL addns., JACKSON, TENN. Jackson-Madison Co., Jackson, Tenn. Bids Jan. 8. CD 1/3.

▲ J. A. Jones Constr. Co., 133 Ellis St., N. E. Atlanta, Ga. CA, $4,795,000. HOUSING, Proj. Tenn. 5-8, NASHVILLE, TENN. Nashville Housing Auth., 701 S. 6 St., Nashville, Tenn. Bids Feb. 7. CD 1/17.

▲† Consolidated Western Corp., 5700 S. Eastern St., Los Angeles, Calif., CA, $11,000,000. GAS DYNAMIC FACILITIES at Arnold Engineering Development Center, TULLAHOMA, TENN. U. S. Eng., Tullahoma, Tenn. CD 11/14/49.

MIDDLE WEST

BIDS ASKED—BUILDINGS

Ill., Roxana—SCHOOL—B.A. 2/28—Roxana Unit School Dist. 1, S. W. Frey, asst. supt. Schools. High School, Chaffery and Tydeman Aves., 2 story, 62x130 ft., 90x36 ft., 36x28 ft. and 1 story 123x96 ft. and 47x27 ft. community high school addns. Wm. B. Ittner, Inc., 408 Bd. Educ. Bldg., 911 Locust St., St. Louis 1, Mo., archt. CD 1/9.

Ill., Glen Ellyn—SCHOOL—B.A. 3/10—School District 87, Glen Ellyn, Glenbard High School, $900,000. Clarence Jensen, 321 Elmore St., Park Ridge, archt. CD 11/28.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Kenny Constr. Co., 111 W. Washington St., Chicago, 2, Ill., LB $989,250, substructure of bascule bridge at Halsted St. over north branch of Chicago River, CHICAGO, ILL. City, City Hall, Chicago, Ill. Bids Feb. 5. CD 1/23.

▲ MICHIGAN—State Hy. Dpt., 222 Townsend St., Lansing, 2 jbs 13.

Carl Goodwin & Sons, Allegan, Mich. CA $694,121, est. $740,000. 24 ft. c. conc. 4,953 mi. US-27 and M-78, F 23-17 C11 (F 100 13), etc., Eaton Co.;

Denton Constr. Co., 7-170 General Motors Bldg., Detroit, Mich. CA $587,976, est. $595,000. 10 in uniform c. conc. 4,357 mi. US-25, F 50-27 C5 (F 180 243), Macomb Co. CD 2/6, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

George W. Timmons, 1277 E. Broad St., Columbus, O., CA, $536,350, 2 story SCHOOL, Spinning Rd., DAYTON, O., Bd. Educ., Mad River School Dist. Oliver Combs, clk., Harshman Rd., Dayton 4, O. Bids Jan. 30. CD 1/11.

▲ Hagerman Constr. Co., Strauss Bldg., Fort Wayne, Ind., LB, $2,892,495, 4 and 5 story, reinf. conc., E-shaped LIFE SCIENCE BLDG., BLOOMINGTON, IND. Bd. Trustees Indiana State University, Bloomington, Ind. Bids Jan. 31. CD 12/12.

† J. L. Simmons Co., Inc., Inland Bldg., Indianapolis, Ind., LB, $385,665, LAUNDRY Bldg. 33, Proj. 2474, INDIANAPOLIS, IND. Veterans Admin., Munitions Bldg., Wash., 25, D. C. Bids Jan. 29. CD 12/18.

† P. & H. Constr. Co., 205 E. Illinois St., Evansville, Ind., CA, $682,475, 60x120 ft. inflammable STORAGE BLDG., and 200x390 ft. RECEIVING BLDG., at Decatur Signal Depot, Serial No. Eng 11-052-52-27, DECATUR, ILL., U. S. Eng., 520 Merchandise Mart, Chicago 54, Ill. Bids Jan. 29. CD 1/3.

▲ Abell-Howe Co., 53 W. Jackson St., Chicago 4, Ill., CA, $20,000,000, design and construct 1,000,000 sq. ft. FACTORY, OAKLAWN, ILL. Hotpoint, Inc., 5600 W. Taylor St., Chicago, Ill. Awarded Feb. 1. CD 11/21.

Jos. J. Duffy Constr. Co., 4944 Elston Ave., Chicago, 30, Ill., CA, $500,000, SCHOOL, ROCKFORD, ILL. St. Patricks Church, 2001 W. State St., Rockford, Ill. Hubbard & Hyland, 303 N. Main St., Rockford, Ill., archts. Awarded Jan. 28.

Kornman Constr. Co., Sterling, Ill., LB, $841,000 superstructure for HOSPITAL addn., STERLING, ILL. Community General Hospital Bd., Sterling, Ill. CD 1/5.

Peter W. Peterson, 182 Stripe Court, Waukegan, Ill., CA, $500,000, DEPARTMENT STORE addn., WAUKEGAN, ILL. Waukegan Dry Goods Co., 132 Washington St., Waukegan, Ill. Clarence Dahlquist & Assocs., 1625 Glenview Rd., Glenview, Ill., archts. Awarded Jan. 30. CD 7/25.

Kroening Eng. Corp., 4500 W. Mitchell St., Milwaukee, 14, Wis., LB, $588,665, 60 DWELLING Units, Proj. Wis. 8-1, SOUTH MILWAUKEE, WIS. Housing Auth., 931 Milwaukee Ave., South Milwaukee, Wis. Bids Feb. 4. CD 1/9.

▲ **Orloff Building Co.**, c/o Ira Hotchkiss Co., 15725 W. 7 Mile Rd., Detroit, Mich. Owner Builds. $1,000,000. 110 single frame HOUSES, Seven Mile Rd. section, on Indian Rd., DETROIT, MICH.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

† **Texas**—B.A. 2/26—U. S. Eng., 606 Santa Fe Bldg., Galveston, dredging approx. 1,100,000 cu. yd. material 18,700 lin. ft. channel of Port Aransas-Corpus Christi Waterway, from 100 ft. eastward of the bascule bridge at Corpus Christi to point approx. 3 mi. eastward of Corpus Christi. CD 6/9/44.

† **South Dakota**—SUB-STATIONS—B.A. 2/27—Bureau Reclamation, Dpt. Interior, Huron, Beresford Sub-station, Spec. No. DC-3647, Flandreau Sub-station, Spec. No. DC-3646, Transmission Div., Missouri River Basin Proj.

† **Tex., Laredo**—AIR BASE UTILITIES—B.A. About 2/27—U. S. Eng., 606 Santa Fe Bldg., Galveston, rehabilitation and alterations existing bldgs. and structures, Inv. No. ENG 41-243-52-65; at Laredo Air Force Base. Bid date changed: CD 1/29.

▲† **Tex., Waco**—WAREHOUSING—B.A. 3/7—U. S. Eng., 1127 Texas and Pacific Bldg., Fort Worth, 105,000 sq. ft. steel or glued laminated frame, masonry base warehousing, etc. for Connally Air Force Base. $1,500,000. CD 8/6.

BIDS ASKED—BUILDINGS

▲ **Tex., Dallas**—HOUSING—B.A. 3/10—Dallas Housing Auth., 2525 Lucas Dr., construct 2nd unit to West Dallas Housing Proj., 82 bldgs. for total 543 units. $4,072,500. Plans deposit $100. Associated West Dallas Housing Architects, 2525 Lucas Dr., archts. CD 12/2/49.

▲† **Ark., Shumaker**—STOREHOUSES—B.A. 3/14—Dist. P. Wks., Office, Eighth Naval Dist., U. S. Naval Station, Building 16, New Orleans, 12, La., inert storehouses, 50x200 ft. buildings, incl. clearing, and earthwork, 7 mi. railroads and 4 mi. road serving the storehouses, water distr., fire protection, lighting, alarm systems, etc. Spec. 32942. Plans deposit $100. CD 12/12.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

TEXAS—State Hy. Dpt., State Highway Bldg., Austin, cancelled bids to have been opened Feb. 20, grading, structures, base, surf., 6.228 mi. Hy. F.M. 481, from 0.59 mi. west of Uvalde to 6.228 mi. southwest, Control No. 1590-1-1. FP No. S 1764 (1), Uvalde Co. CD 1/31.

Basanda Constr. Co., Box 2564, Oklahoma City, Okla., CA, $506,080, addn'l., pole telephone line constr., Dawson, Lynn, Terry, Garza, Yoakum, Martin, Hockley and Gaines Counties, TEXAS. Polka-Lambro Rural Telephone Co-operative, Tahoka, Tex. Bids Jan. 30. CD 10/22.

City, City Hall, Cushing, Tex. cancelled bids to have been opened Feb. 19, natural gas sys., domestic purposes, CUSHING, TEX. Est. $125,000. Will re-advertise. CD 1/29.

▲† **Robert E. McKee, General Contractor, Inc.**, Box 562, El Paso, Tex., LB $4,917,098, nineteen 225-man concrete frame, masonry panel walls barracks; LB $1,-814,118, est. $1,500,000, six 165-man concrete frame, masonry panel walls barracks, steam heating; LB $1,219,000, est. $1,000,000, six 105-man concrete frame, masonry panel walls barracks, steam heating; LB $345,000, est $300,000, 6 battalion headquarters bldg., concrete frame, masonry panel walls, gas-fired heating units; LB $562,235, est. $400,000 6 motor repair shops; LB $386,664, est. $500,000, 6 oil storage bldgs; LB $416,115, est. $500,000, 3 gas and service stations, allied facilities; LB $299,770, est. $250,000, 6 ammunition storage igloos, Serial No. 29-005-52-10 at EL PASO, TEX. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Feb. 5, CD 1/11.

WYOMING—State Hy. Comn., Cheyenne,

Platte Valley Constr. Co., P. P. Box 595, Grand Island, Neb., CA, $193,209, grading, drainage, one-three continuous rein.-con. girder span bridge over Old Women Creek and misc. work on 2.925 mi. New castle-Lusk Rd., Niobrara Co., Proj. F-40 (8). Bids Jan. 24, awarded Feb. 4. CD 1/18.

▲ **Pioneer Pipe Line Co.**, c/o owner, CA, $8,000,000 310 mi. 8 in. products pipe line from Sinclair, Wyo. to Salt Lake City, Utah, WYOMING and UTAH. Sinclair Oil Corp., Casper, Wyo. and Continental Oil Co., Ponca City, Okla. CD 8/14.

† **Spiegelberg Lumber & Bldg. Co.**, 259 W. Fremont St., Laramie, Wyo., LB, $200,777, 1 story 64x332 ft. technical TRAINING BLDG. 1, ENG 25-066-52-36, CHEYENNE, WYO. U. S. Eng., 1609 Jackson St., Omaha, Neb. Bids Jan. 29; CD 1/4.

BUILDINGS

LOW BIDS AND CONTRACTS

U. S. Eng., 1709 Jackson St., Omaha, Neb. rejected bids Aug. 2, to construct, manage, finance Military HOUSING at Sioux Ordnance Plant, Serial No. 103-80002, SIDNEY, NEB. LB $859,266. Will re-advertise. CD 8/14, under LB.

▲ **Charles H. Stanford**, 525 N. W. 23 St., Oklahoma City 6, Okla., CA $1,522,845, 178 unit Negro HOUSING, FORT SILL, OKLA., Council Heights Housing Corp., Lawton, Okla. H. V. Becker, Terminal Bldg., Oklahoma City, Okla., engr. Awarded Feb. 4.

F. J. Allen, Lawton, Okla., Purchase and Hire, $627,000. 38 duplexes for 76 HOUSING units, LAWTON, OKLA. Phillips & Whiting, 2945 Classen St., Oklahoma City, Okla., archts.

Andy Crosby, Jr., Lawton, Okla., Purchase and Hire, $616,920, 48 duplexes for 76 HOUSING units, LAWTON, OKLA. Phillips & Whiting, 2945 Classen St., Oklahoma City, Okla., archts.

▲† **Tankersley Constr. Co.**, 1st Natl. Bank Bldg., Oklahoma City 2, Okla., LB $3,408,713, 60 earth-covered ammunition storage MAGAINES, with appurtenances, NOY 70833;

Cullum & Whittle, Box 5602, Dallas, Tex., LB $3,200,-000, 60-earth covered ammunition storage magazines, etc., NOY 70828, at Naval Ammunition Depot, MCALESTER, OKLA., U. S. Govt., Naval Ammunition Dpt., Ted Rimer, Capt. Commanding Officer, Direc. Const. Div. Dist. Pub. Wks. Office, Bldg. 26, New Orleans, La. Bids Feb. 5, Bailey & Bozalis, 1216 Colcord Bldg., Oklahoma City, Okla., archts. Benham Eng. Co., American Natl. Bldg., Oklahoma City, Okla., engr. CD 1/15.

▲ **Farnsworth & Chambers Co.**, Inc., Box 74, Houston, Tex. CA $1,495,789, 200 unit HOUSING, BEAUMONT, TEX. Beaumont Housing Auth., Beaumont, Tex. Bids Jan. 17. CD 1/2, under LB.

Sisters of St. Joseph's, Branham, Tex., cancelled bids to have been opened Jan. 29, 3 story, basmt., 42x172 ft., brick, rein.-con. frame and fdn. HOSPITAL, BRYAN, TEX. Est. $900,000. Will readvertise. CD 12/28.

▲ **The Lummus Co.**, 385 Madison Ave., New York, N. Y. CA. $10,000,000, general constr. aviation fuels catalytic cracking REFINERY, near CORPUS CHRISTI, Tex. Sunray Oil Corp., Philtower Bldg., Tulsa, Okla. CD 12/1.

Refinery Engineering Co., Wright Bldg., Tulsa, Okla., CA Approx. $850,000 design and construct REFINERY expansion and modernization, CORPUS CHRISTI, TEX. Southwestern Oil & Refining Co., Port and Summers Sts., Corpus Christi, Tex. CD 2/8.

▲ **Robert E. McKee, General Contractor, Inc.**, Box 562, El Paso, Tex., LB $1,037,000, 24 DWELLING bldgs., site imprvs., utilities, all mechanical work, EL PASO, TEX. El Paso Housing Auth., El Paso, Tex. Bids Feb. 6, Louis L. McIlliney, 701 Caples Bldg., El Paso, Tex., archt.

▲† **T. C. Bateson Constr. Co.**, 618 Irwin-Keasler Bldg., Dallas, Tex., LB $2,128,965, est. $1,750,000, 200x 1,200 ft. WAREHOUSE for Quartermaster depot, FORT WORTH, TEX. U. S. Eng., 1127 Texas & Pacific Bldg., Fort Worth, Tex. Bids Feb. 5. CD 12/28.

W. D. Ferguson & Sons, Box 446, Brownsville, Tex., LB $567,802, 48 three-bedroom and 50 one to four-bedroom HOUSING units; LB $314,198, 52 one-bedroom housing units, Tex. 65-1, HARLINGEN, TEX. Harlingen Housing Auth., Harlingen, Tex. Bids Feb. 5. CD 1/14.

▲ **Shell Chemical Corp.**, Shell Bldg., Houston, Tex., Purchase and Hire, $1,685,000, Ethyl Chloride PLANT expansion and Synthetic-Glycerine PLANT expansion, HOUSTON, TEX. CD 10/23.

▲ **Leonard Constr. Co.**, 37 S. Wabash St., Chicago, Ill., CA, Approx. $775,000, est. $586,390, sulphur PLANT (to extract sulphur from waste refinery fumes); CA. Approx. $1,975,000, est. $1,275,000, sulphuric acid PLANT.

Bechtel Corp., 220 Bush St., San Francisco, Calif., CA Approx. $1,250,000, est. $1,043,855, acid sludge decomposition PLANT and polymerization unit for mfg. high-octane gasoline, PORT ARTHUR, TEX. Gulf Oil Corp., Port Arthur, Tex. Grand total $4,000,000. CD 1/30, under LB.

▲ **Kaiser Engineers**, 1924 Broadway, Oakland, Calif., CA $1,375,000 design and Construct modernization existing REFINERY units; Approx. $1,225,000, new REFINERY; Approx. $265,000, pipe lines, STORAGE, and SHOP, TEXAS CITY, TEX. Grand total $2,865,-000. Texas City Refining Co., Texas City, Tex. CD 1/15.

Gulf Oil Corp., Petroleum Bldg., Fort Worth, Tex., Own Forces. $675,000. Sulphur Recovery PLANT unit, WADDELL, TEX. CD 1/8.

Geo. O. Teats & Sons, 414 W. Pikes Peak Ave., Colorado Springs, Colo., LB, $554,689, POWER PLANT structure, COLORADO SPRINGS, COLO. City, City Hall, Colorado Springs, Colo. Bids Jan. 28. CD 1/14.

Mid & Mount Constr. Co., Railway Exchange Bldg., Denver, Colo., LB, $725,000 general contract 2 story Harry V. Kepner Junior High SCHOOL, W. Kentucky and S. Hazel Court, DENVER, COLO. School Dist. 1, 414 14 St., Denver, Colo. Bids Jan. 30. CD 1/23.

FAR WEST

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Alex Robertson Co.**, 14411 S. Paramount Blvd., Paramount, Calif., CA, $749,919, sewers, storm drains, well drilling, water tank water and gas distr. sys., Davis-Monthan Air Force Base, ENG 04-353-52-20, TUCSON, ARIZ. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Jan. 22, awarded Jan. 30. CD 1/15.

▲† **A. G. Homann**, Lacey, Wash., LB, $1,177,297 Motor pools for permanent troop facilities in Regimental Areas 1 and 2, Inv. 52-111, FORT LEWIS, WASH. U. S. Eng., 14735 E. Marginal Way, Seattle 4, Wash. Bid Feb. 6. CD 1/11.

▲† **Teichert & Son, Inc.**, 251 S. Figueroa St., Los Angeles, Calif., LB, $1,079,071, improv Los Angeles River, Van Nuys Blvd. to Sepulveda Dam, River mile 41.41 to 42.54, Los Angeles County Drainage Area, CALIFORNIA. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Feb. 5. CD 1/25.

† **H. B. Nicholson Co.**, **James L. Ferry and N. P. Van Valkenburg**, 808 E. Colorado St., Pasadena, Calif., LB, $372,140, static firing facilities for liquid fuel; Spec. 32960, INYOKERN, CALIF. Naval Ordnance Test Station, Inyokern, Calif. Bids Jan. 31. CD 1/18.

Healy-Tibbitts Constr. Co., 411 Brannan St., San Francisco, Calif. CA, $812,720, cellular steel sheet pile bulkhead, rock dikes, Berth 121-126, Pier E, HD 342, Long Beach Outer Harbor, LONG BEACH, CALIF. Bd. Harbor Comn., Long Beach, Calif. Bids Jan. 30. Awarded Feb. 4. CD 2/7, under LB.

Hoffman & Jacobs, 1122 Gaviota St., Long Beach, Calif., CA, $304,584, electric light, power and telephone system at Berths 195-108, Spec. 1199, Wilmington, LOS ANGELES, CALIF. Los Angeles Harbor Dpt., City Hall, Los Angeles, Calif. Bids Jan. 23. CD 12/12, awarded Jan. 30.

Peter Sorensen, 927 Arguello St., Redwood City, Calif., LB $852,571, Schedules 1 and 2, water treatment plant, reservoirs, mains, etc., PITTSBURG, CALIF. City, City Hall, Pittsburgh, Calif. Bids Jan. 31. CD 1/3.

BUILDINGS

LOW BIDS AND CONTRACTS

Howard S. Wright & Co., 407 Yale Ave. N., Seattle, Wash. CA, $945,000, TELEPHONE BLDG. with equipment, SEATTLE, WASH. Pacific Telephone & Telegraph Co., 3 and Spring Sts., Seattle, Wash. Jones & Bindon, Hoge Bldg., Seattle 4, Wash. archts. CD 8/14.

A. Ritchie & Co., Box 253, Walla Walla, Wash., CA, $867,360 4-unit HIGH SCHOOL, HERMISTON, ORE. Hermiston School Bd., Hermiston, Ore. Bids Feb. 6. CD 1/22.

▲ **Leonard Constr. Co.**, 37 S. Wabash St., Chicago, Ill., CA $3,000,000. 250 ton sulphuric acid and phenol PLANT, AVON, CALIF. Monsanto Chemical Co., 1700 S. 2 St., St. Louis, Mo. CD 2/7.

▲ **Myers Bros.**, 3407 San Fernando Rd., Los Angeles, 65, Calif. CA, $1,374,000, 229 stucco DWELLINGS, Tract 17010, LOS ANGELES, CALIF. Allondra Park, Inc., 3407 San Fernando Rd., Los Angeles 65, Calif. Paul J. Duncan, 13310 Moorpark St., Sherman Oaks, Calif., archt.

Fluor Corp., Ltd., 2500 Atlantic St., Los Angeles, Calif., CA, $720,424 cooling towers for Valley STEAM PLANT, LOS ANGELES, CALIF. Dpt. Water & Power, 207 S. Broadway, Los Angeles, Calif. Bids Dec. 28, awarded Jan. 31. CD 1/31/45.

Crown Constr. Co., 1231 S. La Brea Ave., Los Angeles, Calif., CA, $414,770, 50-unit low-rent HOUSING, NEEDLES, CALIF. Housing Auth. of San Bernardino Co., 640 Crestview Ave., San Bernardino, Calif. Bids Jan. 30. CD 1/4.

Sooy & Jackson, 508 N. First St., Redlands, Calif., LB, $304,950, SCHOOL, NILAND, CALIF. Niland School Dist., Niland, Calif. Bids Jan. 30. CD 1/8.

▲ **Shaw Constr. Co.**, 8634 E. Firestone Blvd., Downey, Calif. Owner Builds. $1,392,000, 116 DWELLINGS, 16 St., Valencia, Crestview, Fremontia Sts., SAN BERNARDINO, CALIF.

I. C. Curry, 1701 B St., San Diego, Calif., CA, $751,-415, 2 story, rein.-con. Lincoln High SCHOOL, SAN DIEGO, CALIF. San Diego Unified School Dist., 825 Union St., San Diego, Calif. Bids Jan. 29, awarded Jan. 30. CD 11/16/50.

E. Philip Merritt, Inc., P. O. Box 414, San Rafael, Calif., LB, $614,000, 100 frame, stucco on slab DWELLING UNITS, Cal 45-1, SAN PABLO, CALIF. San Pablo Housing Auth., P. O. Box 118, San Pablo Calif. Bids Feb. 5. CD 1/11.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

N. B., Moncton—AIR TERMINAL—B.A. 2/25—F. T. Collins, secy. Dpt. Transport, Ottawa, Ont., air terminal bldg. at airport, $200,000. Plans deposit $25.

Man., Winnipeg—PUMPHOUSE, etc.—B.A. 2/26—W. J. Milhausen, engr. Defence Constr. Ltd., 400 Kensington Bldg., pump house and one 200,000 gal. concrete storage tank, Approx. $100,000; sewage disposal plant and steam sewage lift station $309,060, both at R.C.A.F. Station. Plans deposit $100.

▲ **Alta., Namao**—BUILDINGS—B.A. 3/4—W. J. Milhausen, engr., Defence Constr. Ltd., 400 Kensington Bldg., Winnipeg, Man., 9 buildings at R.C.A.F. Station Approx. $1,600,000. Plans deposit $100.

BIDS ASKED—BUILDINGS

Alta., Edmonton—HEADQUARTERS—B.A. 2/25—G. H. N. Monkman, Parliament Bldgs., 4 story, 601x120 ft. rein.-con. Civil Defence Headquarters Bldg. Plans deposit $50. Patrick Campbell-Hope, Toohey Bldg., archt.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **International Constr., Inc.**, 2515 Van Horne Ave., Montreal, Que., Owner Builds, $1,500,000, 127 brick, stone BUNGALOWS, BEACONSFIELD, QUE. E. Bijald, 6904 Molson St., Montreal, archt.

▲ **J. P. Pourport**, 155 Elm St., Beaconsfield, Que., Owner Builds, $1,000,000, 100 one and half story, concrete, brick DWELLINGS, BEACONSFIELD, QUE.

Concrete Constr. Ltd., 1082 Decarie Blvd., Montreal, Que. CA $822,185, completion concrete frame at Printing Bureau, Sacred Heart Ave., HULL, QUE. Govt. of Canada, Dpt. Printing & Stationary, St. Patrick St., Ottawa, Ont. CD 2/6, under LB.

▲ **H. & O. Greenberg**, 4490 Prince of Wales Ave., Lachine, Que., CA $2,400,000, 14± story, bsmnt., concrete, brick DWELLING UNITS, 54 Ave., LACHINE, QUE. Cavendish Gardens, Inc., 4490 Prince of Wales Ave., Lachine, Que.

▲ **J. M. Fortin**, 10 Dahria St., Dorval, Que., Owner Builds, $2,000,000, 200 COTTAGES, PINE BEACH, QUE.

FOREIGN

BIDS ASKED—HEAVY CONSTRUCTION

Egypt—B.A., After 3/3—Hydro-Electric Power Comm., Ministry of P. Wks., Cairo, Egypt, supply, erection and maintenance of an air-conditioning and ventilation installation required for Hydro-Electric Power Station at Aswan Dam. Plans deposit LE.10 ($28.80 American Dollars). Kennedy & Donkin, 12 Caxton St., London, S.W.1, consult. engrs. CD 12/14/45.

PROPOSED PROJECTS

WATER SUPPLY

Calif., Corcoran—City, City Hall, bond election Apr. 8, WW imprv. $130,000. Anderson & Anderson, Corcoran, engr. CD 8/23.

Ind., Madison—Bd. P. Wks., Mayor C. H. Vaughn, chn., City Hall, WW exten. sys., Madison to North Madison Industrial Dist., incl. 10 and 12 in. mains, 2 new wells, 1 m. g. storage reservoir, $425,000.

La., Minden—City, voted $130,000 bonds, WW imprvs. CD 12/13.

▲ **Md., Towson**—Comrs. Baltimore Co., Court House, 2 pumping stations, water mains, sewer, 20,000 ft. 36 in. concrete or c.i. pipe, Bear Creek area, $1,800,000, Whitman, Requarst & Assoc., 1304 St. Paul St., Baltimore, engrs.; pumping station, $500,000. Rummel, Klepper & Kahl, 1021 N. Calvert St., Baltimore, engrs. for both projs. CD 1/26/44.

Mass., North Easton—Town, Water Dept., water supply, $125,000, Whitman & Howard, 89 Broad St., Boston, consult. engrs.

Miss., West Point—City, $507,000 bond election Mar. 1, WW imprvs.

Mont., Absarokee—Absarokee Water Users Assoc., Absarokee, water and sewerage sys., 2 wells, water storage tank, 16,500 ft. water line, 16,000 ft. sewer line, pump house digester tank, aerator tank, settling tank, 2 sludge beds of resin-con., 2 deep well turbines, $175,000, Paul Williams, State Water Conservation Bd., Helena, consult. engr.

Okla., Oklahoma City—Oklahoma Industries, Inc., Skirvin Tower, water, sewer, paving for industrial development, S. W. 15 and May Sts., $150,000. Lee M. Bush & Co., Colcord Bldg., consult. engrs.

R. I., East Providence—Town Bd. Selectmen, water sys. addn., 6- to 16-in. pipe, Contr. B, parts of Northern and Southern Sect., Contr. 10, Northern Sect. Contr. 12, misc. streets, $300,000. Charles A. Maguire & Assoc., 1015 Turks Head Bldg., Providence, consult. engrs.

▲ **Tex., Corsicana**—City, City Hall, voted bonds Feb. 2, water main rehabilitation, $250,000; water supply, $400,000; storage reservoir on Chambers Creek, $750,000. CD 1/29.

▲ **Tex., Dallas**—City, City Hall, Main and Harwood Sts., defeated bonds Jan. 29, new raw water supply from dam to be built up-county, $1,014,000; 20 m. g. water storage reservoir at Hillcrest and Walnut Hill Lane, $1,111,980; water supply main from Carrollton Water plant main near Buchman Lake to Sunset Reservoir in Oak Cliff, $1,000,000; water supply main from Carrollton line to new Hillcrest Reservoir, $1,000,000; misc. constr. of various-size water mains, storage and some sys. rehabilitation, $2,764,020. J. G. Rollins, eng. in chg. P. Wks. CD 1/14.

▲ **Tex., Houston**—City, City Hall, 900 Brazos St., canal imprvs. for canal running from San Jacinto Dam to filter plant in city, distance 14 mi., $2,000,000; clearing pipe lines in proposed San Jacinto Dam and Reservoir area, relocating same, $1,250,000; clearing San Jacinto Dam and Reservoir Proj. of all growth, etc. $600,000. Freese, Nichols & Turner, 211 C. & I. Bldg. consult. engrs. CD 12/22.

▲ **Tex., Ranger—Eastland**—Eastland County Water Supply Dist., Ranger, 1,100 ft. domestic water supply dam, 80 ft. high, on Leon Creek, 7 mi. southwest of Ranger, impound 32,000 acre ft. water, $3,500,000. Freese & Nichols 407 Danciger Bldg., Fort Worth, consult engrs. CD 2/25/49.

W. Va., Buckhannon—City, waterworks plant addn., pipe lines, settling basin and pumps, $150,000. Blundon Snyder and Small, Keyser, W. Va., consult. engrs.

SEWERS, WASTE DISPOSAL

Ark., North Little Rock—Sewer Dist. 9, North Little Rock, sewer lines, $175,000. Max A. Mehlburger, Pyramid Bldg., Little Rock, consult. engr. CD 3/10/49.

Calif., Redlands—City, City Hall, sewage disposal system expansion, $300,000. Currie Eng. Co., Anderson Bldg., San Bernardino, consult. engr. CD 1/8/51.

▲ **Calif., Santa Clara**—City, City Hall, bond election about Apr. 1, sanitary sewers, water distr. sys., electrical sys., etc. $1,525,000. Geo. L. Sullivan, Dean of Engineering, University of Santa Clara, Santa Clara, engr. CD 1/16/48.

Del., Smyrna—Smyrna Town Council, voted bonds sewage disposal plant, sewers, water distr., electric distr. $250,000. CD 1/17.

Ind., Anderson—Edgewood Village, Edgewood Village Anderson R.R. 8, Ind., sewerage sys. and disposal plant, $300,000. Martin Milling, Forest Hills, Anderson, consult. engr.

Ind., Edgewood—Town Bd., H. Don Forse, pres. Edgewood, sewage treatment plant, and storm sewers, 30 in. trunk sewer and laterals, $250,000. Martin Milling, 2 Griffith Bldg., Anderson, consult. engr.

La., Minden—City, voted $190,000 bonds, sanitary sewer imprvs. CD 12/13.

Miss., West Point—City, $560,000 bond election Mar. 1, sanitary sewer imprvs.

Mo., Maryville—City, voted $450,000 bonds Jan. 29, sewerage sys., 2 disposal plants, pumping station, 4.6 mi. sewer line.

▲ **Mo., Sikeston**—City, Joe Cravens, mayor, City Hall, voted $1,050,000 bonds, imprvs., extension sanitary sewerage sys., sewage treatment plant, auxiliaries, appurtenances, etc. CD 2/7.

N. Y., Cheektowaga—Town, modernization, expansion of sewage treatment plant, Dist. 3, $253,000; trunk sewer from Dist. 7 to sewage treatment plant, $75,000.

▲ **Tex., Dallas**—City, City Hall, Main and Harwood Sts., defeated bonds Jan. 29, storm sewers, southern and western sect. of city, $1,625,000; in northern and eastern sect. of city, $1,500,000; addnl. sanitary sewers for 5-mile creek proj. $615,000; exten. White Rock sanitary sewer line to Vickery, $360,000; addnl. sanitary sewers White Rock and Dixons branch areas, $367,000; sanitary sewers for Pleasant Mound and Pleasant Grove areas, $250,000; Coombs Creek relief sanitary sewers, $250,000. J. G. Rollins, eng. in chg. P. Wks. CD 1/14.

Wis., Sheboygan—City, storm sewers in Kohler Memorial Dr. and Superior S. Aimen and Kohler District, $270,000. B. C. Seal, city engr.

BRIDGES

▲ **Calif., San Francisco**—City and San Francisco Co., City Hall, subway system for city, $100,000,000. Charles E. DeLeuw, 150 N. Wacker Dr., Chicago, Ill., engr. on preliminary plans.

Ind., Crown Point—Bd. Comrs., Lake Co., S. E. Olszewski, audit., Court House, 1 span rein.-con. bridge over Little Calumet River, 80 ft. roadway, two 5 ft. walks, 28 ft. roadway, $150,000. Sam Brownstein, Court House, co. engr. CD 10/22/47.

STREETS AND ROADS

▲ **Calif., Berkeley**—City, City Hall, freeway to link Eastshore Highway with Broadway-Landvale Separation $15,000,000. CD 2/21/45.

Ia., Cherokee—City, street imprvs., $285,000.

▲ **Mass., Boston**—State, Metropolitan Dist., Comn., 20 Somerset St., Market St., extension, wid'n. Broad St. between Market and Commercial Sts., to provide cut off to Expressway on Gen. Edwards Bridge and Lynn Shore Dr. $3,000,000.

Mich., Royal Oak—City, E. M. Shafter, mgr., b. conc. paving various streets, $250,000. CD 2/17/44.

Mo., St. Louis—City, Frank J. McDevitt, pres. Bd. Pub. Service, 304 City Hall, 12 and Market Sts., Zone 3, reconstr. Kingshighway from Oakland Ave. to West Pine Blvd., incl. wid'n. roadway, $120,000. CD 8/10/44.

▲ **Tex., Dallas**—City, City Hall, Main and Harwood Sts. defeated bonds Jan. 29, asph. paving Hatcher St. 6-lanes wide, Lamar to Scyene Rd., $417,000; alley paving under property owners participation plant, $1,000,000; some southside residential street paving, under property owners participation plant, $2,000,000; concrete curbs, gutters, Garland Rd. and Continental and Industrial, $63,600; widen Illinois to 6-lanes, Zang to Hampton St., $332,000; some paving, and all concrete curbs and gutters, Commerce and Industrial on Corinth and N. W. Hy. and Buckner, $63,000; asph. paving, Peavy St., Garland Rd. to Santa Fe Ry., $60,000; eliminate jogs, pave at Peavy and Garland, Harwood and Commerce, Young and Harwood, Ross and Market Sts. $72,000; asph. paving, Ukraine and Kessler, Zang to Lancaster, $88,000; widen, and asph. paving Elm, Pearl to Preston, concrete curbs and gutters, Hines, Amelia to Hondo, $75,000; asph. paving, Routh-McCochran connection, wid'n. and asph. pave Gaston, Westshone to H. & T. C. Ry., concrete curbs and gutters, Fort Worth cutoff at Davis St., $86,000. J. G. Rollins, eng. in chg. P. Wks. CD 1/14.

Wash., Seattle—City, County-City Bldg., Seattle, Zone 4, paving 43 Ave. N.E., etc. $162,757. R. W. Finke, city engr.

Wis., Wauwatosa—City, c. conc. paving various streets $200,000. H. B. Wildschut, c/o owner, engr.

Ont., Cornwall—United Counties of Stormont, Dundas & Glengarry, L. C. Kennedy, clk., County Bldg., program road construction, $450,000. CD 1/31/50.

EARTHWORK, WATERWAYS

Okla., Talihina—State Resources Bd., Capitol, Oklahoma City, Zone 5, earthen dam and spillway on Canyon Creek at Talihina, $150,000. Peyton Smith, c/o owner, engr.

AIRPORTS

† **Miss., Biloxi**—FACILITIES—U. S. Eng., P. O. Box 1169, 2301 Grant St., Mobile 7, Ala., plans by Shiords & Mogabgab, W. I. Rosamond, DeLaureal & Moses, Great Southern Hotel, Gulfport, engrs. and archts., re-design facilities at Keesler Air Force Base. CD 2/7/51.

Okla., Ponca City—AIRPORT—City, voted bonds, municipal airport expansion, $220,000. Fred Fellows, Ponca City, consult. engr. CD 1/16.

Tex., Houston—HANGAR, etc.—The Andrau Airpark, Westheimer Rd., 5-unit hangar constr. $100,000; exten. runways, of iron ore and macad. $100,000; one large steel hangar, $150,000, near here.

† **Wash., Spokane**—ELECTRICAL DISTRIBUTION SYSTEM—U. S. Eng., City-County Airport, Walla Walla, electrical distri. system at stub parking areas, Fairchild Air Force, $375,000. CD 5/1.

† **Alaska, Fairbanks**—SEA PLANE BASE—Territorial Dpt. of Aviation, Juneau, sea plane base, $130,000.

LATIN AMERICA

Brazil, Sao Paulo—Brazilian Aluminum Co., Sao Paulo, plans 7,000 ton yearly capacity aluminum mill. Approx. $500,000.

Brazil, Valongo—Cia Docas de Santos, Santos, Sao Paulo, plans construction pier and 2 kilometers of wharves. $808,000.

Mexico, Tiugambato—Mexican Govt., Comision Federal de Electricidad (Federal Electricity Comn.) Humbuldt, 45, Mexico City, plans 150,000-kw electricity generating plant. $600,000.

PUBLIC BUILDINGS

▲ **Calif., Fairfield**—HOMES—City Fairfield Planning Comn., City Hall, 600 low-cost homes on 50 ft. lots west of city limits. $4,000,000.

▲ **Calif., Lafayette**—SCHOOL—Acalanes Union High School Dist., Neil M. Parsons, supt., Lafayette, bond election Mar. 25, Orinda High School unit addns., at Las Lomas School in Walnut Creek, $1,500,000. CD 10/28/47.

Conn., Fairfield—SCHOOL—Town Bd. Educ., plans by Lyons & Mather, 211 State St., Bridgeport, Conn., 1 story school, near Mona Terrace, $778,095.

Del., Wilmington—SCHOOLS—Mount Pleasant Special School Dist., Duncan Rd. and Phila. Pike, plans by George E. Pope & Albert Kruse, 1108 Washington St., school, $750,000; plans by Weston Hoit Blake, 903 Jefferson St., gymnasium, $300,000.

▲ **Ill., Chicago**—HOUSING—Chicago Housing Auth., 608 S. Dearborn St., plans by Friedman, Alschuler & Sincere, 223 W. Jackson Blvd., Zone 6, 850 unit apartment, Ida B. Wells Extension. $8,000,000. CD 2/2/50.

▲ **Ill., Robbins**—HOUSING—Cook County Housing Auth., 33 N. La Salle St., Chicago, Zone 2, plans by Friedman, Alschuler & Sincere, 223 Jackson Bldg., Chicago, Zone 6, 100 unit housing. $1,000,000.

▲ **Ia., Davenport**—COURT HOUSE—Scott Co., W. F. Voss, aud., defeated $2,000,000 bonds, county court house, $2,580,000. C. C. Woodburn, c/o Daugher, Rich & Woodburn, 302 Garver Bldg., Des Moines, archt. CD 11/29.

▲ **Kan., Abilene**—SCHOOL—Bd. Educ., $849,463, bond election Feb. 25, high school, $1,220,000, J. W. Radotinsky, 1402 Fairfax Trafficway, Kansas City, Kan., archt. CD 4/14/48.

▲ **Kan., Independence**—COMMUNITY COLLEGE—School Dist. 5, Montgomery Co., plans by Williamson, Loebsach & Assoc., National Bank of Topeka Bldg., Topeka, community college, near here, $1,250,000. CD 12/4.

▲ **Kan., Manhattan**—STUDENT UNION—State Bd. Regents, Topeka, plans by C. L. Marshall, state archt., Topeka, student union bldg., Kansas State College, $1,500,000. CD 11/1/45.

Kan., Parsons—SCHOOL—Bd. Educ., Harry Ireland, clk., plans by J. W. Radotinsky, 1401 Fairfax Trafficway, Kansas City, Kan., West Junior High School, $600,000. CD 1/28/51.

La., Minden—SCHOOL—Webster Parish School Bd., Minden, voted $800,000 bonds school imprvs.

▲ **Mass., Everett**—HOUSING—Everett Housing Auth., plans by Parker J. Brown, 18 Tremont St., Boston, 125 housing units, PHA 27-1. $1,250,000. CD 8/20.

▲† **Mich., Romulus**—PLANT—Dpt. Navy, 18 St. and Constitution Ave. N. W., Wash. 25, D. C., assembly and testing jet aircraft engine plant, $50,000,000. Ford Motor Co., 3000 Schaffer St., Dearborn, Mich., will operate.

N. H., Exeter—HIGH SCHOOL—City, School Dpt., plans by Alfred T. Granger Assoc., Main St., Hanover, 3 story, 220x230 ft., brick, steel concrete Junior and Senior High School, Linden St. $748,000.

▲ N. Y., Brooklyn—HOUSING—New York City Housing Auth., 63 Park Row, New York, Zone 38, plans by Gustave W. Iser, 109 E. 29 St., New York, Zone 16. Sumner Houses, 1,100 apartments in nine 7 story bldgs. and two 12 story bldgs., on 21.8 acre site bounded by Broadway and Lewis Sts., Myrtle, Throop and Park Aves. $16,625,000.

▲ N. D., Williston—HOUSING—Williston Housing Auth., Williston, plans by Central Eng. Corp., archts.-engrs., Northern Hotel Bldg., housing. $1,500,000.

▲ Okla., Madill—RESORT HOTEL—State Resources Bd., Capitol, Oklahoma City, Zone 5, plans by Harold Flood, Ardmore, recreation resort hotel at Lake Texhoma. $1,800,000. CD 7/11.

▲ Pa., Ligonier—HIGH SCHOOL—School Dist. Legonier Twp., Ligonier plans by Robert J. Brocker, 201 Coulter Bldg., Greensburg, 2 story, brick, block consolidated Grade and Junior High School $1,000,000.

Pa., Sharpsville—HOUSING—Mercer Co. Housing Auth., Farrell, plans by Clepper & Mallorie, 54 Buhl Blvd., Sharon, 2 story 60-family row type, brick veneer housing, Proj. 20-B. $750,000. CD 9/20.

R. I., North Kingstown—SCHOOL—Town, School Dpt., plans by MacConnel & Walker, 20 Centerville Rd., Apponaug, school, York Town Manor. $500,000.

▲ Tenn., Jackson—HOUSING—Jackson Housing Auth., Jackson, 205 unit Negro Housing. $2,000,000.

Tenn., Memphis—LIBRARY—City, City Hall, central library. $500,000. CD 6/24/43.

▲ Tex., Gilmer—HOUSING—Gilmer Housing Auth., Gilmer, plans by Joseph H. Gaylord, 722 N. P. Anderson Bldg., Fort Worth, 140 housing units. $1,050,000. CD 3/30/50.

Vt., Montpelier—HIGH SCHOOL—City, Bd. Educ., Montpelier, plans by Webber & Erickson, 56½ Merchants Row, Rutland, high school. $500,000. 6/11/46.

Wash., Edmonds—SCHOOL—School Dist. 15, Edmonds, bond election Mar. 11, Lynwood Junior High School, $650,000; Mountlake Terrace Elementary school, $325,000. W. A. Johnson, 1 St. National Bank Bldg., Everett, archt. CD 9/28/50.

▲ Wash., Port Orchard—CLASSROOM—South Kitsap School Dist. 402, Port Orchard, 35-classroom addn., $1,000,000.

Ont., Goderich—COURT HOUSE—Huron Co., A. H. Erskine clk., Goderich, plans by L. G. Bridgman, Royal Bank Bldg., London, court house, $500,000. CD 7/3/46.

COMMERCIAL BUILDINGS

Ark., Little Rock—MEDICAL CENTER—Fausett & Co., 215 Louisiana St., medical center, Markham and Hayes Sts., $600,000.

▲ Conn., East Hartford—APARTMENT—Bernard Chizner & Assoc., c/o Kane & Fairchild, archts., 734 Asylum Ave., Hartford, 2 story, brick apartments, between Main and High Sts., north of Wadsworth St., $1,000,000.

Conn., Hartford—APARTMENT—The Shoreham Corp., c/o Stewart A. Barkland, 150 Greenway, Forest Hills, N. Y., 3 separate buildings, masonry APARTMENT, Hendrickson Ave. between Warwarme Ave. and Aircombe St., $800,000.

▲ Fla., Miami—HOSPITAL—North Dade Hospital, Inc., 8037 N. E. 2 Ave., Miami, hospital, $1,000,000.

Mass., Boston—HOME—Boys' Town of Massachusetts, Fred Amgersadian, exec. dir., 462 Boylston St., Boston, plans by Alexander Astor, 27 Oliver St., Watertown, Boys' Town, $600,000.

Mass., Lowell and Lawrence—HOME—Boys' Town of Massachusetts, Fred Amgersadian, exec. dir., 462 Boylston St., Boston, plans by Alexander Astor, 27 Oliver St., Watertown, Boys' Town, $600,000.

▲ N. M., Alamogordo—HOUSING—U. S. Eng., 2134 E. Central Ave., Albuquerque, plans by Max Flatow & Janson Moore, 1820 Campus Blvd. Albuquerque, construct, manage, finance, 400-unit housing. $3,000,000. CD 11/15/49.

▲ Pa., Newton Square—RESIDENCES—Norman P. Foster, Jr., Bishop Hollow and Gradyville Rd., residential development, Gradyville Rd., etc. $1,000,000.

▲ Pa., Phila.—BASIC SCIENCE—Drexel Institute of Technology, 32 and Chestnut Sts., plans by Bader, Young & Schultze, 1500 Walnut St., basic science bldg. $1,479,590. CD 12/27/48.

▲ Pa., Phila.—RESIDENCES—Owner, c/o Mayer Finestein, 1623 Walnut St., residential development, Holme Circle. $2,000,000.

▲ Pa., Ross Twp.—SHOPPING CENTER—Philip Reicher & Assoc., 2271 Shady Ave., Pittsburgh, 100,000 sq. ft. shopping center, near Pittsburgh, Perry Hy. $1,000,000.

▲ Tex., Fort Worth—OFFICE—Commerce Co., Flatiron Bldg., office. $2,250,000.

Tex., Houston—CHURCH—Chapelwood Methodist Church, Memorial Dr., plans by Hamilton Brown, 2017 W. Gray St., church, $450,000.

▲ Tex., Victoria—DWELLINGS—J. O. Ford Constr. Co., Victoria, Unit 1, 40 dwelling units, $300,000; Unit 2, 45 dwellings, $337,500; Unit 3, 36 frame, masonry dwellings, concrete slab fdn., in Parkwood addn. $310,000; 62 mostly frame type dwellings, various locations, $465,000.

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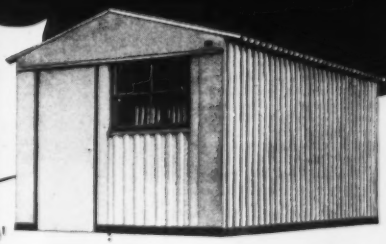

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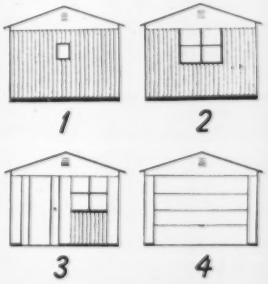

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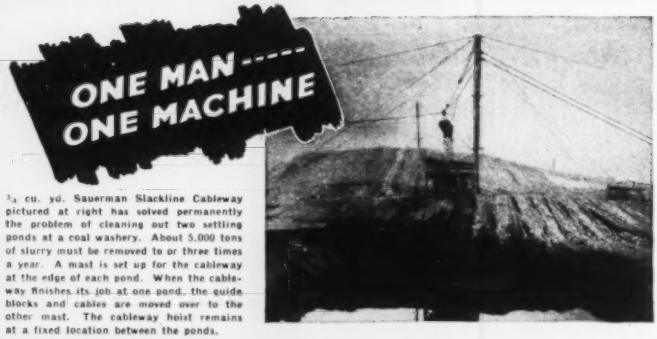

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Tex., Victoria—HOUSING—Quincy Lee Constr. Co., 211 Olmos Dr. West, San Antonio, 34 housing units, $300,000; 65 rental housing units, $487,500.

▲ Ont., Cooksville—APARTMENT—Benjamin Pass, c/o Harold A. Clark, Ltd., 22 Lake Shore Rd., Toronto, apartment, 45 two and three story, structures on 48 acre site at Dixie Rd. and near Queen Elizabeth Way. $7,000,000.

▲ Ont., Toronto—OFFICE—Canadian National Railways, B. Wheelwright, ch. engr., 355 McGill St., Montreal, Que., plans by G. F. Drummond, c/o owner, ch. archt., 6 story office, express garage, Front St. $3,000,000.

INDUSTRIAL BUILDINGS

▲ Calif., Avon—PLANTS—Monsanto Chemical Co., 1700 S. 2 St., St. Louis, Mo., sulphuric acid and phenil plants, Approx. $3,000,000.

▲ La., Shreveport—PLANT—Ralston Purina Co., 835 S. 8 St., St. Louis, Mo., plant, $1,000,000.

▲ Mass., Weymouth—PLANT—Boston Edison Co., 39 Boylston St., Boston, Unit 6, 65x230 ft., brick, concrete, steel Edgar Plant addn.; 130 ft. high, Monatiquot St., North Weymouth, $30,000,000, Jackson & Moreland, 31 St. James St., Boston, consult. engrs.

Tex., Dallas—SHOP, etc.—Abbott-Stansell Motor Co., 1220 San Jacinto St., Houston, auto shop, sales, service, San Jacinto and Caroline Sts. $450,000.

Wash., Seattle—WAREHOUSE—Northern Pacific Ry. Co., B. Blum, ch. engr., 176 E. 5 St., St. Paul, Minn., plans by T. A. Smith, Lowman Bldg., Seattle, Zone 4, 183x289 ft., rein.-con. warehouse piling fdn. $300,000. A. T. Kane, Lowman Bldg., Zone 4, consult. engr. Standard Oil Co., lessee. CD 3/3/50.

▲ Wis., Milwaukee—WAREHOUSE—Jos. T. Ryerson & Son Co., 2558 W. 16 St., Chicago, Ill., warehouse, W. Adler St. and Chicago, Milwaukee & St. Paul, Pacific R.R. $2,000,000. CD 4/26.

Ont., London—WAREHOUSE, etc.—Canadian General Electric Co., 212 King St. W., Toronto, plans by O. Roy Moore & Co., 260 Dundas St., warehouse and offices. $500,000.

UNCLASSIFIED

Ark., Texarkana—PHONE SYSTEM—Southwest Arkansas Telephone Co-operative, Texarkana, rural phone system in Miller Co., $406,000. Marion L. Crist & Assoc., Union Life Bldg., Little Rock, consult. engrs.

Florida—RURAL DISTRIBUTION LINE—West Florida Electric Co-operative Assoc., Graceville, 96 mi. rural distr. line and sys. imprvs., Jackson Co. $415,000.

Louisiana—RURAL DISTRIBUTION LINES—Bossier Rural Electric Membership Corp., Bossier City, 264 mi. rural distr. lines, Bossier Co. $340,000. Frank H. Horton & Co., Lamar, Mo., consult. engrs. CD 1/30/51.

Mich., Ann Arbor—SWIMMING POOL—University of Michigan, Harlan H. Hatcher, pres., plans by Lee Black & Kenneth C. Black, 706 Capitol Savings & Loan Bldg., Lansing, women's swimming pool, $200,000. CD 3/27/51, under Public Bldgs.

▲ Minnesota—TRANSMISSION LINE—Northern States Power Co., B. F. Bratheney, pres., 15 N. 5 St., Minneapolis, 115,000 volt electric and 55 mi. transmission line between St. Cloud and Coon Rapids, $1,250,000-$1,500,000.

▲ Minn., Minneapolis—PARKING RAMP—Regents of University of Minnesota, C. A. Smith, acting purch. agt., 323 Admin. Bldg., parking ramp on Washington Ave. S. E. between Union and Harvard Sts. $1,000,000.

Nebraska—RURAL DISTRIBUTION LINES—McCook Public Power Dist., McCook, rural distr. lines, sys. imprvs., Red Willow Co. $305,000. P. L. Burns, Davenport Bank Bldg., Davenport, Ia., consult. engr.

Neb., Bellevue—POWER SYSTEM—City Council, Bellevue, to vote Nov. 4th election, municipal power and light sys. $450,000. Kirkham, Michael & Assoc., 1504 Dodge St., Omaha, consult. engrs. CD 2/5.

N. M., Farmington—GAS LINES—El Paso Natural Gas Co., Bassett Tower, El Paso, Tex., field gas collection lines, $450,000.

N. M., Shiprock—GAS MAIN—El Paso Natural Gas Co., Bassett Tower, El Paso, Tex., natural gas main, $350,000.

Pa., Phila.—RECREATION CENTER—Dpt. Recreation, City Hall Annex, plans by Louis A. Manfredi, 2228 Mifflin St., Smith Recreation Center, $350,000. CD 2/12/47.

▲ Texas—GAS PIPE LINE—United Gas Pipe Line Co., 1525 Fairfield Ave., Shreveport, La., 36 mi. 18- to 24-in. natural gas pipe line main between Ingleside and Refugio, $2,000,000; pumping or booster station on 36 mi. gas line near Refugio, $400,000; and near Ingleside $375,000. CD 10/3/50.

Tex., Dallas—TRANSMISSION LINE, etc.—Southwestern Electric Service Co., Mercantile Bank Bldg., transmission line, extens., imprvs. $225,000; distr. lines, $250,000.

Tex., Fort Worth—CABLE LINES—Southwestern Bell Telephone Co., 1115 Throckmorton St., Cable lines, $275,000.

Washington—TRANSMISSION LINE—Clallam Co. Public Utility Dist., Port Angeles, 69,000 volt power transmission line from Port Angeles to Forks, Clallam Co. $650,000. W. S. McCrea, Jr., Perkins Bldg., Tacoma, consult. engr.

CONSTRUCTION REPORTS-Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
February 26 Massachusetts

STREETS AND ROADS
February 26, March 4 Massachusetts

Mass., **Grafton**—B.A. 2/26—South Grafton Water Dist., Town Hall, South Grafton, Contr. 2, water mains, South Grafton. $328,000. Howard S. Bailey, 6 Beacon St., Boston, engr. CD 5/2/51.

BIDS ASKED—BUILDINGS

Mass., **Springfield**—PLANT—B.A. 2/25—Monsanto Chemical Co., 812 Monsanto Ave. (selected list bidders) Mfg. Plant Bldg. 85B addn., Warehouse Bldg. 85C. Gilbert Small & Co., 10 State St., Boston, engrs. CD 10/31.

Conn., **Danbury**—CLASSROOM, etc.—B.A. 2/27—State P. Wks. Comr., State Office Bldg., Hartford, classroom and auditorium bldg., Danbury Teachers College, B/A-R-63 $800,000. Plans deposit $25. Philip Sunderlund, 81 West St., archt. Bids July 13 rejected. CD 7/20, under LB.

Conn., **East Hartford**—SCHOOL—B.A. 2/27—Town, Town Hall, Joseph O. Goodwin School addns., alterations. Plans deposit $25. Wrapples & Brewer, 15 Lewis St., Hartford, archts. CD 8/31/44.

Conn., **Norwich**—HOUSING—B.A. 2/28—City Housing Auth., 242 Main St., PHA 18-1 Housing, off Sunset Park. Plans deposit $50. Chandler & Palmer, 16 Franklin St., archts. CD 1/16.

▲ Mass., **Lowell**—HOUSING—B.A. 3/7—Lowell Housing Auth., John McPadden, chn., 18 Market St., superstructure 162 housing units and heating plant, PHA, 1-2, Chelmsford St. $1,740,000, Krokyn & Browne, 184 Boylston St., Boston, archts. CD 12/11.

Mass., **Pittsfield**—SCHOOL—B.A. 3/12—City, School Dpt., South Junior High School, William St. Pomeroy and Marshall Aves. Plans deposit $50. CD 11/26.

† R. I., **Davisville**—WAREHOUSE—B.A. 4/4—Pub. Wks. Office, First Naval Dist., 495 Summer St., Boston, Mass., 4 warehouses and property office bldg., Naval Advanced Base Supply Depot, No. 32576. Plans deposit $20. CD 2/13.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

NEW HAMPSHIRE—State Dpt. P. Wks. & Hys., State House, Concord.

Mooney Bros. Constr. Co., 46 Green St., Bristol, N. H. LB $67,993, highway and bridge, S 49 (1), S-2243 Lebanon. Bids Feb. 7.

CONNECTICUT—State Hy. Comr., State Office Bldg., Hartford.

Marian Constr. Co., 222 Forbes Ave., New Haven, Conn., LB, $104,249, highway, Derby. Bids Feb. 16. CD 1/24, under Bridges.

BUILDINGS

LOW BIDS AND CONTRACTS

Margill Constr. Co., Inc., 73 Leicester St., Brighton, Mass. LB $437,186. POWER PLANT at city hospital, QUINCY, MASS. City, Dpt. P. Wks., Quincy, Mass. Bids Feb. 8. CD 1/21.

Charles E. Collins, 6 Rose Pl., Springfield, Mass. Owner Builds. $495,000. fifty-five 1½ story RESIDENCES, East Springfield, SPRINGFIELD, MASS.

▲ **Wexler Constr. Co.**, 2 Elm Pl., Brookline, Mass., LB $2,748,425, superstructure HOUSING, RI 3-2, Lathrop Property-Fairmount Sect., WOONSOCKET, R. I. Woonsocket Housing Auth., 66 Morin Heights Blvd., Woonsocket, R. I. Bids Feb. 8. CD 1/23.

▲ **Wadhams & May Co.**, 15 Lewis St., Hartford, Conn., CA $1,136,645, High SCHOOL, Hubbard St., GLASTONBURY, CONN. Town, Bd. Educ., Glastonbury, Conn. Bids Jan. 11, awarded Feb. 5. CD 1/21, under LB.

Benjamin F. Poriss, 300 Auburn Rd., West Hartford, Conn., LB, $393,963, Florence E. Smith SCHOOL addns., alterations, WEST HARTFORD, CONN. Town Bd. Educ., Memorial Rd., West Hartford, Conn. Bids Feb. 1. CD 1/11.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
STREETS AND ROADS
March 14 Pennsylvania

D. C., Wash.—B.A. 2/28—Dist. of Columbia, District Bldg., 14 and E. Sts., N.W., making test borings in East Branch Piney Branch Trunk Sewer, vicinity of Randolph St., Kansas Ave. N.W., E.D. 264129-2. CD 7/14/44.

D. C., Wash.—B.A. 3/4—Dist. of Columbia, District Bldg., 14 and E. Sts., constr. trunk water main Bladensburg Rd. N.E. between New York Ave. and 25 Place, E.D. 261543-9. CD 7/14/44.

† D. C., Wash.—PYLON—B.A. 3/11—General Services Admin., 18 and D Sts., N.W., construction and carving of sculptured pylon at Constitution Ave. entrance of U. S. Court House.

† Md., **Andrews Air Force Base**—DORMITORIES—B.A. 3/13—U. S. Eng., First and Douglas Sts. N.W., Wash. 25, D. C., airmen's dormitories, Eng. 49-080-52-43-341. CD 1/28.

† N. Y., **Rome**—ELECTRONIC TEST FACILITIES—B.A. 3/28—U. S. Eng., 80 Lafayette St., New York, Zone 13, electronic test facilities at Griffiss Air Force Base. $818,000. Extended date. Alexander D. Crossett, 27 William St., New York, Zone 5, engr. CD 12/12.

BIDS ASKED—BUILDINGS

N. Y., **Baldwin**—SCHOOL—B.A. 2/28—Bd. Educ., Union Free School Dist. 10, Baldwin High School, Pershing Blvd., grade school, Hastings Ave., west of Milburn Ave. $700,000. CD 9/14.

N. Y., **New York**—B.A. 3/4—Bd. Educ., Supt. School Bldgs., Design & Construction, 49 Flatbush Ave. Exten., Brooklyn, Zone 1, general constr.; heating and ventilating; plumbing and drainage; electrical work for modernization of and addn. to P. S. 121, 103 St. and Lexington Ave. $795,000. Plans deposit $15 general constr. $7 each others. CD 9/20.

Del., **Harrington**—SCHOOL—B.A. 3/5—Harrington Special School Dist., Harrington, school and gymnasium addn. $556,745. Walter Carlson, 1014 Delaware Ave., Wilmington, archts. CD 10/19.

N. J., **Vineland**—FURNACE, etc.—B.A. 3/10—Kimble Glass Div., Owens-Illinois Glass Co., Vineland, N. J., furnace and tube alley bldg., Approx. $700,000. Holabird & Root & Burgee, 180 N. Wabash Ave., Chicago, Ill., archts.

† Pa., **New Cumberland**—WAREHOUSE—B.A. 3/11—U. S. Eng., 24 St. and Maryland Ave., P. O. Box 1715, Baltimore 3, Md., Warehouse 85 and appurtenant work, New Cumberland General Depot, Serial No. ENG 18-020-52-33. Extended date. CD 2/14.

N. J., **Rockaway**—SCHOOL—B.A. 3/25—Morris Hills Regional Dist. Bd. Educ., 33 Union St. Morris Hills Regional High School, W. Main St., $798,000. CD 10/17, under LB.

▲ N. Y., **Manhasset**—HIGH SCHOOL—B.A. 3/27—Bd. Educ., Union Free Dist. 6, High School, Memorial Pl. high school addns., alterations. $1,977,000.

† N. J., **Dover**—BUILDING—B.A. 4/10—U. S. Eng., 80 Lafayette St., New York, 13, N. Y., reconstructing

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Building 210 at Picatinny Arsenal, $150,000. Plans deposit $5. CD 11/15.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **U. S. Eng.**, 80 Lafayette St., New York 13, N. Y. cancelled bids to have been opened about Apr 17, aero recon. laboratory, training aide bldg., transmitter bldg., rocket storage and navigation aids at Griffiss Air Force Base, ROME, N. Y. Est. $2,714,000. CD 12/12.

NEW JERSEY—State Hy. Dpt., Trenton.

Saxe Contg. Co., 136 E. 57 St., New York, N. Y., $63,645, landscaping Palisades Interstate Parkway, Bergen Co. Bids Jan. 29. CD 1/10.

McElwee & Courbis Constr. Co., Inc., 503 Market St., Camden, N. J., LB, $74,600, pumping station walkways and roadway, CAMDEN, N. J. City, City Hall, Camden, N. J. Bids Feb. 6. CD 1/9.

Construction Corp. of Penna., 2237 Bryn Mawr Ave., Phila., Pa., LB $426,765, sewage treatment plant exten., CONSHOHOCKEN, PA. Conshohocken Municipal Auth., Boro Hall, Conshohocken, Pa. Bids Feb. 6. CD 1/10.

General State Auth., 18 and Herr Sts., Harrisburg, Pa. cancelled bids to have been opened Feb. 27, sanitary sewerage sys. imprvs. at Woodville State Hospital, WOODVILLE, PA. Est. $60,000. CD 1/29.

Curtin & Johnson, Inc., 1125 Wentwood Rd. N.E., Wash., D.C., LB, $61,613, c. conc. alleys and sidewalks, ED 264205-1, WASH., D. C. Director of Highways, District Bldg., Wash., D. C. Bids Feb. 7

▲ **J. L. McIlvaine Co.**, 925 12 St. N.W., Wash., D. C. and **Able Contractors, Inc.**, 1423 N. Quincy St., Arlington, Va., CA, $1,776,798, Interceptor Sewer C, along Christian Creek, WILMINGTON, DEL. City, City Hall, Wilmington, Del. Bids Jan. 29. CD 2/7, under LB.

▲ **Ahl Bros.**, Branchville, Md., LB, $1,776,789 Contr. 5, Intercepting Sewer C, 9,500 ft. 60 and 78 in. sewers, 1,600 ft. 18 in. sewer, WILMINGTON, DEL. City, Street and Sewer Dpt., City Hall, Wilmington, Del. Bids Jan. 29. CD 12/12.

BUILDINGS

LOW BIDS AND CONTRACTS

Overton Homes, c/o Schulman & Soloway, archts., 100-15 Queens Blvd., Forest Hills, N. Y. Owner Builds. Approx. $300,000. 22 HOUSES on tract, Bell Blvd. and 67 Ave., BAYSIDE, N. Y.

▲ **Caye Constr. Co.**, 356 Fulton St., Brooklyn 1, N. Y. CA. Approx. $1,500,000. 5 story wing addn. to HOSPITAL, Beach 19 St., FAR ROCKAWAY, N. Y. St. Joseph's Hospital, 327 Beach 19 St., Far Rockaway, N. Y.

▲ **Allied Homes**, c/o Alwin Cassens, Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. Approx. $4,000,000. 400 HOUSES on 100 acre site, Jerusalem Ave., HICKSVILLE, N. Y.

▲ **Alan Homes**, c/o Teas & Steinbrenner, archts., Homeland Bldg., Malverne, N. Y. Owner Builds. Approx. $1,500,000. 186 HOUSES, Southern State Parkway and Hicksville Rd., MASSAPEQUA, N. Y.

▲ **Crown Village Homes**, c/o Stanley Klein, archt., 89-31 161 St., Jamaica, N. Y. Owner Builds. Approx. $10,000,000. 600 one-family HOMES on 131 acre tract, Merrick Rd. and Sunrise Hy., MASSAPEQUA, N. Y.

Westchester Const. Co., Inc., 50 Harlem Ave., White Plains, N. Y. CA. Approx. $350,000. CLUBHOUSE, Milton Point, RYE, N. Y. American Yacht Club, Milton Point, Rye, N. Y. Rogers & Butler, 219 E. 44 St., New York 17, N. Y., archts.

▲ **Clearmeadow Homes**, c/o John W. Burton, archt., 163-18 Jamaica Ave., Jamaica, N. Y. Owner Builds. Approx. $2,750,000. 200 HOUSES on 56-acre tract, Jackson Ave. opposite Pine St., SYOSSET, N. Y.

Parkway Village, c/o Alwin Cassens, archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. Approx. $900,000. 66 HOUSES on tract, Dutch Broadway off Corona Ave., VALLEY STREAM, N. Y.

▲ **Forest City Terrace, Inc.**, c/o Matern & York, archts., 90-04 161 St., Jamaica, N. Y. Owner Builds. Approx. $1,800,000, 125 HOUSES on 32 acre tract, Jerusalem and Wantagh Aves., to be known as Lakeview-at-Forest City, WANTAGH, N. Y.

V. B. Constr. Co., 737 Second Ave., New York 16, N. Y. LB $487,000, Beech Street SCHOOL addns., alterations, WANTAGH, N. Y. Bd. Educ., Union Free School Dist. 23, Wantagh School, Beech St. and DeMott Ave., Wantagh, N. Y. Bids Jan. 11. CD 1/4.

▲ **Mayfair Park Homes**, c/o Matern & York, archts., 90-04 161 St., Jamaica, N. Y. Owner Builds. $8,000,000. 800 HOUSES on 173 acre tract, Hicksville-Massapequa Rd., WANTAGH-PLAINEDGE, N. Y.

Walter Kidde Constructors, Inc., 140 Cedar St., New York 6, N. Y. CA Approx $200,000, ENGINEERING and DEVELOPMENT BLDG., BELLEVILLE, N. J. Walter Kidde & Co., 675 Main St., Belleville, N. J.

▲ **William L. Blanchard & Co.**, 52 Pointer St., Newark, N. J., CA, $1,205,000, HOSPITAL addn., DOVER, N. J. Dover General Hospital, Jardine St., Dover, N. J. Bids Nov. 29. CD 12/5, under LB.

▲ **A. C. S. Home Builders**, Pleasant Valley Ave., Moorestown, N. J., Separate Contracts, $1,232,000. RESIDENTIAL DEVELOPMENT, Lumberton Rd., MOUNT HOLLY, N. J. Edward A. L. Cox, 709 Market St., Camden, N. J., archt.

Hickory Manor, Lafayette Ave., Toms River, N. J., Separate Contracts, $450,000. RESIDENTIAL DEVELOPMENT, Terrace Ave., TOMS RIVER, N. J.

Embassy Homes, Inc., 2534 W. Thompson St., Phila., Pa., Separate Contracts, $412,800, RESIDENTIAL DEVELOPMENT, Embassy Terrace, VINELAND, N. J. Dante J. D'Anastasio, 1815 Federal St., Camden, N. J., archt.

▲ **Anthony P. Miller, Inc.,** 3333 Arctic Ave., Atlantic City, N. J., CA. $1,000,000. APARTMENT DEVELOPMENT, ALLENTOWN, PA. Central Park Apartments, c/o general contractor. W. R. Morton Keast, 1201 Chestnut St., Phila., Pa., archt.

▲ **Samuel N. Rhodes,** 707 N. Orange St., Media, Pa., Separate Contracts. Approx. $3,000,000. RESIDENTIAL DEVELOPMENT, Upper Chichester Rd., BOOTHWYN, PA.

Curtis Pethick Co., Hill and Hickory Sts., Wilkes-Barre, Pa., CA. $450,000. OFFICE addns., alterations. HAZLETON, PA. Bell Telephone Co. of Penna., 210 Pine St., Harrisburg, Pa. Bids Jan. 10. CD 1/2.

George K. Heebner, Inc., 1231 Vine St., Phila., Pa. CA. $135,000. 1 story, 61x222 ft., masonry TRUCK REPAIR SHOP, PHILA., PA. Associated Transports, Inc., 429 W. Memorial Ave., Springfield, Mass. Bids Sept. 28. CD 9/28.

Oak Lane Corp., 1614 Upsal St., Phila., Pa., CA. $600,000. RESIDENTIAL DEVELOPMENT, Mascher St., PHILA., PA. Melrose Park Gardens, 1614 Upsal St., Phila., Pa. Frederick Wise, 2063 S. Cecil St., Phila., Pa., archt.

Henry A. Knott, 2107 N. Charles St., Baltimore, Md. LB $682,500. 27x82 ft., 27x83 ft. and 27x99 ft. 2 story each, 85 HOUSING units, NO. MD 1-2, Eastport, near ANNAPOLIS, MD. Annapolis Housing Auth., 89 College Ave., Annapolis, Md. Bids Jan. 9. CD 12/26.

Jas. Keelty, 4200 Edmondson Ave., Baltimore, Md. Owner Builds. $360,000. sixty 2 story, masonry RESIDENCES, BALTIMORE, MD.

Kirby & McGuire, 2518 Greenmount Ave., Baltimore, Md. CA $155,000. 1 story, 27x208 ft., masonry food processing PLANT, BALTIMORE, MD. Parks Engineering Co., Inc., 4111 Menlo Dr., Baltimore, Md.

▲ **Calabro Contractors, Inc.,** 529 Fourth Ave., Elizabeth, N. J. CA $6,952,000. PLANT, HAGERSTOWN, MD. Fairchild Engine & Airplane Corp., Aircraft Div., Hagerstown, Md. Bids Feb. 2. CD 2/1.

Victor N. Judson Co., Inc., 1518 K St. N.W., Wash., D. C. LB $389,337. 1 story, 192x230 ft., brick, concrete block, concrete steel Poolesville SCHOOL, POOLESVILLE, MD. Montgomery Co. Bd. Educ., Rockville, Md. Bids Jan. 24. CD 1/9.

John Tester & Sons, Inc., 1620 2 St. S.W., Wash., D. C. CA, $445,000, HEATING PLANT, E.D. 264133-1. WASH., D. C. Dist. of Columbia Dir. of Constr., 14 and E Sts. N. W., Wash., 4, D.C. Bids Jan. 29, awarded Jan. 30.

Bd. of Educ., 511 W. 8 St., Wilmington, Del., rejected bids Jan. 16, Dr. Charles R. Drew Elementary SCHOOL. LB. $510,800. WILMINGTON, DEL. CD 1/24, under LB.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
February 29 Kentucky
STREETS AND ROADS
February 27 Louisiana February 29 Kentucky

▲ † **Va., Arlington**—BARRACKS, etc.—B.A. 2/26—U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C., barracks bldg., paving, parking areas, etc. at Washington Natl. Airport, Gravelly Point. $1,000,000. CD 1/21.

N. C., Butner—B.A. 2/28—State Hospitals Bd. Control, Raleigh, sanitary sewers, pumping station at Butner State Hospital. Plans from Hosp. Supt. H. Raymond Weeks, 504 Snow Bldg., Durham, engr.

† **La., Shreveport**—OFFICERS QUARTERS—B.A. 2/29—Purchasing & Contracting Office, Barksdale Air Force Base, Shreveport, repairs, renovation to base officers quarters.

† **Ky., Lexington**—B.A. 3/4—Dist. P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk 11, Va., surf. driveway, parking lot at Naval Reserve Training Center, NOY 71056, Spec. 32842. Plans deposit $10.

† **Ky., Lexington**—B.A. 3/6—Office of Deputy Regional Director, Pub. Bldgs. Service, General Services Admin., U. S. Court House, 219 S. Clark St., Chicago, Ill., sewage treatment plant at U. S. Public Health Service Hospital, Proj. No. RS-4-26. CD 12/6/49, under Public Bldgs.

▲ **Miss., Gulfport**—B.A. 3/13—City, sanitary sewer imprvs. $2,500,000. Plans deposit $75, H. D. Shaw & Assoc., P. O. Box 167, Gulfport, and Wiedeman & Singleton, P. O. Box 1878, Atlanta, Ga., engrs. CD 1/9.

† **B. W. I. Bahama Islands**—PROVING GROUND—Bids Asked—Bureau Yards & Docks Annex, Navy Dpt., Arlington, Va., catchment area and water supply sys., consisting generally of catchment area, piping, pumps, 2 pump houses, catchment area will be given a bit. sealing tr., wood frame pump house with cement-asbestos siding, etc. at the Eleuthera Island, Joint Long Range Proving Ground. Spec. 33398. Plans deposit $10.

BIDS ASKED—BUILDINGS

† **Ga., Camp Stewart**—SHOP—B.A. 2/26—Purch. & Contg. Office, Camp Stewart, rehabilitation of building for Q.M. furniture repairs and metal work shop.

N. C., Chapel Hill—POWER and HEATING PLANT—B.A. 2/26—University of North Carolina, Chapel Hill, power and heating plant addns. Plans deposit $10. Wm. C. Olsen, 5 Exchange Pl., Raleigh, engr.

N. C., Laurinburg—HOUSING—B.A. 2/26—Laurinburg Housing Auth., Carl L. Jones, exec. dir., Laurinburg, *housing, Proj.* NC 18-1 and 18-2 (14 bldgs., 75 units). Plans deposit $50. Bid date changed. Ross Shumaker, Box 5445, Raleigh, Edwards & McKimmon, 743 W. Johnson St., Raleigh, and W. B. Griffin, Edwards Bldg., Goldsboro, archts. CD 2/1.

Miss., Indianola—SCHOOL—B.A. 2/29—Indianola Municipal Separate School Dist., Junior-Senior High School. $345,000. Plans deposit $25. E. L. Malvaney, Millsaps Bldg., Jackson, archt. CD 9/5.

Fla., Hollywood—HOSPITAL—B.A. After 3/1—South Broward Hospital Bd., 2136 Hollywood Blvd., hospital, Approx. $750,000. Cedric Start & Donald H. Moeller, Bayard, C. Lukens and C. R. Mobert, 320 Professional Bldg., archts.

† **Ga., Camp Gordon**—BUILDING—B.A. 3/3—Purch. & Contg. Office, Camp Gordon, altering radio Repair Maintenance Building No. T20801, Inv. 09-057-5-24B.

La., Haynesville—WAREHOUSE—B.A. 3/3—Mid-Valley Pipe Line Co., P. O. Box 2388, Longview, Tex., warehouse.

Fla., Cocoa—HOUSING—B.A. 3/4—Cocoa Housing Auth., Cocoa, Fla., housing Projects FLA 19-1 and FLA 19-2. Plans deposit $50. Extended date. CD 10/31.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Blythe Bros. Co., 2911 Hutchinson Ave., Charlotte, N. C. LB, Sect. 3, $192,886.

Lee Constr. Co., 422 S. Church St., Charlotte, N. C. LB $108,680, Sect. 4, sanitary sewer imprvs., ALBEMARLE, N. C. City, City Hall, Albemarle, N. C. Bids Feb. 5. CD 1/16.

▲† **Wm. L. Crow Constr. Co.,** 101 Park Ave., New York, N. Y., and **T. A. Loving & Co.,** Bank of Wayne Bldg., Goldsboro, N. C. CA. $3,512,000, erection of radio transmitter, EAST ARCADIA, N. C. State Dpt. 21 St. and Virginia Ave. N. W., Wash. 25, D. C.

† **J. D. Manly** Constr. Co., Leesburg, Fla., LB, $480,609 runway, taxiway extensions, etc. at Moody Air Force Base, Inv. 52-38, VALDOSTA, GA. U. S. Eng., P. O. Bldg., Savannah, Ga. Bids Feb. 9. CD 1/1.

† **Leifert Constr. Co.,** 2401 N. W. 2 Ave., Miami, Fla., CA, $634,537, three airmen's dormitories at Patrick Air Force Base, Inv. 52-94, COCOA FLA. U. S. Eng., P. O. Box 4970, Jacksonville, Fla. Bids Feb. 5.

† **Southern Constr. Co.,** Daniel Field, Augusta, Ga., CA $169,898, Parachute Bldg. and dinghy shop, hydrogen-oxygen storage bldg. and radar trainer bldg. at Pinecastle Air Force Base, Inv. 52-98, ORLANDO, FLA. U. S. Eng., 575 Riverside Ave., Jacksonville, Fla. Bids Feb. 5. CD 14.

Harbert Constr. Corp., 2337 20 Ave. S., Birmingham, Ala., CA, $132,937, sewerage disposal plant and outfall lines, ENTERPRISE, ALA. City, Enterprise, Ala. Bids Aug. 20. (Correction—contractor). CD 8/30, under CA.

Boh Bros. Constr. Co., 2400 Cypress St., New Orleans, La. LB $69,283. Contr. 328-S and 333-W, sewer and water mains, NEW ORLEANS, LA. Sewer & Water Bd., 526 Carondelet St., New Orleans, La. Bids Feb. 6. CD 1/29.

† **Latex Constr. Co. of Georgia,** 4911 Old Peachtree Rd., Atlanta, Ga. CA $546,488, est. $643,842. Aircraft refueling sys., in.l. 12 underground storage tanks, 6 aircraft refueling outlets, oil storage tanks, ENG. 15-029-52-38, FORT CAMPBELL, KY. U. S. Eng., 830 W. Broadway, Louisville, Ky. CD 1/23, under LB.

Alley Constr. Co., Bristol, Va., CA, $66,073, Div. 1; **Clinchfield Constr. Co.,** Kingsport, Tenn., CA, $160,924, Div. 2, sanitary sewer imprvs., KINGSPORT, TENN. City, City Hall, Kingsport, Tenn. Bids Feb. 5. CD 1/11.

BUILDINGS

LOW BIDS AND CONTRACTS

Southeastern Constr. Co., 301 W. 2nd St., Charlotte, N. C. CA. Approx. $350,000. DEPARTMENT STORE addns., CHARLOTTE, N. C. Montaldo's, 220 N Tryon St., Charlotte, N. C.

Owen Constr. Co., Greensboro, N. C. Owner Builds. Approx. $300,000. several RESIDENTIAL DEVELOPMENTS, GREENSBORO, N. C.

G. L. Wilson Building Co., Statesville, N. C., LB $440,000. HIGH SCHOOL, U. S. 52 between Midway and Welcome, LEXINGTON, N. C. Davidson Co. Bd. Educ., P. L. Feezor, chn., Lexington, N. C. Bids Feb. 7. CD 1/30.

D. Stanley Brown, Blackville, S. C. Owner Builds. $600,000. 75 HOUSING units, BLACKVILLE, S. C.

Long Corp., 32 Mount Pleasant St., Charleston, S. C. Owner Builds. Approx. $300,000. RESIDENTIAL DEVELOPMENT, adjoining Waylyn Sub-division, CHARLESTON, S. C.

▲ **Standard Constr. Co.,** 15 11th St., Columbus, Ga., CA, $1,271,650, substructure for Steam Electric GENERATING PLANT, NORTH AUGUSTUS, S. C. South Carolina Electric & Gas Co., 1321 Main St., Columbia, S. C. CD 11/29.

Sand Hill Apartments, c/o F. Arthur Hazard, archt., Marion Bldg., Augusta, Ga. Owner Builds $350,000 APARTMENT DEVELOPMENT, AUGUSTA, GA.

Hugh W. Richards, Carrollton, Ga. Owner Builds, $800,000 100 RESIDENCES, CARROLLTON, GA.

B. C. Hamilton, Columbus, Ga., Owner Builds, $350,000, several RESIDENTIAL DEVELOPMENTS, COLUMBUS, Ga.

A. R. Abrams Co., Exchange Place, Atlanta, Ga., CA $400,000, Department STORE Alterations, addns., MACON, GA. Silvers, Inc., c/o contractor.

Charles A. Bacon, Jr., Daytona Beach, Fla. CA, $350,000 50 RESIDENCES, DAYTONA BEACH, FLA. 535 Corp., c/o contractor.

Bibbson Constr. Co., 409 S. 28 Ave., Hollywood, Fla., Owner Builds, $300,000, RESIDENTIAL DEVELOPMENTS, HOLLYWOOD, FLA.

Sea Island Development Co., Medeira Beach, Fla., Owner Builds, $900,000, RESIDENTIAL DEVELOPMENT, MADEIRA BEACH, FLA.

The Mackle Co., 2818 S. W. 22 St., Miami, Fla. Owner Builds, Approx. $500,000, RESIDENTIAL DEVELOPMENT, S. W. 40 Terrace and 99 Ave., MIAMI, FLA.

Cravero Constructors, Inc., 11295 Biscayne Blvd., Miami, Fla. Owner Builds, $500,000, 67 RESIDENCES, Sec. F, of Biscayne Gardens Subdivision, MIAMI, FLA.

Herbert Hodgman, 1525 San Rafael Ave., Coral Gables, Fla., CA $300,000, CHURCH addn., MIAMI BEACH, FLA. Church By The Sea, 2 Camden Dr., Bal Harbour, Fla.

Sun Ray Homes, Inc., 1900 N. E. 182 St., Miami Beach, Fla., Owner Builds, $300,000, RESIDENTIAL DEVELOPMENT in Fulford-By-The-Sea Subdivision, MIAMI BEACH, FLA.

Miami Travelers, Inc., 4749 N. W. 36 St., Miami Springs, Fla. Owner Builds, $350,000, HOTEL, MIAMI SPRINGS, FLA.

▲ **Reynolds Metal Co.,** Lister Hill, Ala., Owner Builds, $2,000,000, PLANT Addns., LISTER HILL, ALA. CD 2/12.

Perrilliat-Rickey Constr. Co., P. O. Box 7027, New Orleans, La. LB $350,000. Parochial SCHOOL, CHALMETTE, LA. Our Lady of Prompt Succor Parochial School, c/o Wm. R. Burk, archt., 632 Pirates Alley New Orleans, La. Bids Feb. 5. CD 1/23.

▲ **Blount Bros. Constr. Co.,** 817 Bell Bldg., Montgomery, Ala. CA $791,000, Item A, foundations; **Feges Constr. Co.,** 711 Wesley Temple Bldg., Minneapolis, Minn., CA $5,635,000, Item B, structures for GRAIN ELEVATOR, NEW ORLEANS, LA. Port of New Orleans Comrs., 2 Canal St., New Orleans, La. CD 1/25, under LB.

Hamby Constr. Co., Athens, Tenn., CA. $592,242, HOUSING, Projects Tenn. 17-1 and 17-2, LEBANON, TENN., Lebanon Housing Auth., Lebanon, Tenn. 2/12, under LB.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
February 26 Michigan
STREETS AND ROADS
February 26 Michigan February 26, 29 Wisconsin

Mich., Detroit—B.A. 2/26—Bd. Comrs., Wayne Co. J. P. O'Hara, chn., 3800 Cadillac Tower, three 3.4 m. g. concrete storage tanks, piping, etc., Electric and Montie Aves., Lincoln Park $400,000; 20,600 lin. ft. 36 in. water mains, parts of West Chicago and Middle Belt Rds., Redford and Livonia, $100,000; 1 m.g. elevated steel water tank, West Rd. between Fort and Railroad, Trenton, $200,000. Plans deposit $5 each, refundable, Leroy Smith, 3800 Cadillac Tower, co. engr.

Mich., Detroit—B.A. 2/26—City, Carl D. Warner, comr. Dpt. P. Wks., Guardian Bldg., Zone 26, Group parts of Cadillac, Dickerson, Ryan Rd., Trumbul and Woodrow Wilson Sts. George R. Thompson, city engr. RC 52-4, 201,070 sq. yd. two-course conc. c. recapping CD 12/17.

† **Ohio**—B.A. 2/26—U. S. Eng., Engineer Park, Buffalo 7, N. Y., 440,000 cu. yd. maintenance dredging, Cuyohoga River Cleveland Harbor, CIVENG 21. CD 1/29.

† **Wis., Madison**—DORMITORY—B.A. 2/26—U. S. Eng., 428 Federal Bldg., Milwaukee, Zone 1, airmen's dormitory at Truax Air Force Base, Serial Eng 47-013-52-5. Extended date. CD 1/18.

▲ **Ill., Chicago**—B.A. 2/28—City, City Hall, two-level superhighway, South Wacker Dr., from Madison to Monroe Sts. $1,000,000. CD 9/13.

BIDS ASKED—BUILDINGS

Wis., Hartford—SCHOOL—B.A. 2/28—Twp. Dist. 7, Hartford, school. $580,000. Maurer & Maurer, Lafayette Bldg., South Bend, Ind., archts.

Wis., Milwaukee — PLANT — Bids Asked — Milwaukee Dressed Beef Co., 126 N. Muskego Ave., 1 story parking plant, $250,000. H. C. Christensen, 600 N. Michigan Ave., Chicago, 11, Ill., archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **OHIO**—State Hy. Dpt., T. J. Kauer, dir., Columbus Zone 5,

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Sutton & Stewart, Inc., Main St., Bridgeport, O., LB $166,307, est. $152,950. Type T-35, 2.073 mi. SR 7-24.73, F-457 (8), Columbiana Co.; LB **$64,230**, est. $66,980. Type T-35, 0.953 mi. T. R. 855 and CR 410, S-349 (2), Parts 1 and 2, Columbiana Co.;

A. J. Baltes, Inc., 11 Olive St., Norwalk, O., LB **$467,873**, est. $445,600. Type T-50 and T-71, 1.15 mi. USR 20-(24.78-25.89), FI-51 (8), Sandusky Co.;

Manix Brothers, Greenville, O., LB **$78,583**, est. $76,150, Type T-35 and structure 0.246 mi. USR 40-5.67, Montgomery Co.;

Clyde L. Moore, Inc., R. F. D. No. 1, Lowellville, O., LB $61,768, est. $63,900. Type T-35 and structure 0.102 mi. SR 88-12.46, S-101 (3), Portage Co.; LB $70,877, est. $78,400, Type T-71 and structure 0.082 mi. SR 306-4.33, S-46 (3), Lake Co.;

Harry Miller, Suffield, O., LB **$236,814**, est. $231,530, Type T-35, 2.24 mi. SR 261 (0.72-1.19), U-1089 (1), S-543 (1), Medina Co.;

Oyler Brothers, Inc., 1324 Second St., S. W., Canton, O. LB $75,786, est. $69,410, Type T-35, 4.05 mi. USR 21-(0.00-1.33), (3.55-5.01), Stark Co.;

Elmer Vogt, Inc., 859 Wellman Ave. S.E., Massillon, O., LB $72,495, est. $91,200, Type T-10, 2.881 mi. CR T-98, S-347 (3), Stark Co.;

Walter L. Follmer, P.O. Box 173, Hamilton, O., LB $210,395, est. $189,850, Type T-35 and structure 1.08 mi. SR 123, 17.24, 27.98, S-658 (3), S-658 (2), Parts Nos. 1 and 2, Warren Co. Bids Feb. 5, CD 1/23.

The Fishel Co., 1170 Kinnear Rd., Columbus, O., LB $254,231, 32,000 ft. 20 in. iron pipe for water force main and installation on North Side, COLUMBUS, O., City, City Hall, Columbus, Oo. Robert F. Werner, city engr. CD 1/18/45.

Charles DeLong, Bradley, Ill., LB, **$170,301** sanitary sewers, KANKAKEE, ILL. City, City Hall, Kankakee, Ill. CD 11/24/50.

G. E. Tillman Constr. Co., Centralia, Ill., CA, **$102,950** sewage disposal plant, SESSER, ILL. City, Sesser, Ill. G. C. Cooney, Belleville, Ill., engr. Awarded Feb. 6. CD 6/18.

† **C. A. Hooper**, 453 W. Gilman St., Madison, Wis. LB $750,500, power plant, steam distr. lines at Kinross Air Force Base, Eng. 2-064-52-38, KINROSS, MICH. U. S. Eng., 1900 Cadillac Tower, Detroit 26, Mich. Bids Jan. 24. CD 1/4.

† **Forrester Constr. Co.**, 600-605 Sill Bldg., Flint 3, Mich. CA **$165,989**, readiness bldg., incl. necessary appurtenant thereto, Selfridge Air Force Base, Eng. 20-064-52-11 (Neg), SELFRIDGE AIR FORCE BASE, MICH. U. S. Eng., 1900 Cadillac Tower, Detroit, Mich. Bids Nov. 5. CD 10/15.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Richmond Home Builders, Inc.**, Richmond, Ind. Owner Builds. **$1,500,000**, 100 HOMES in Hillsdale Addition, BLOOMINGTON, IND.

† **H. C. Harlan Builders, Inc.**, Mundelein, Ill., LB, $195,624, 2 BLENDING BLDGS., KINGSBURY, IND. U. S. Eng., 520 Merchandise Mart, Chicago, 54, Ill. Bids Feb. 5. CD 1/23.

R. D. Robbins & Son, Kokomo, Ind. Owner Builds, $500,000. homes in Sycamore Gardens, KOKOMO, IND.

Ted Grusd, 1768 West Walnut St., Kokomo, Ind. Owner Builds, Approx. **$350,000**, 30 HOMES, streets and sidewalks on 30 acre track known as Forest Park, west of KOKOMO, IND.

▲ **Durable Constr. Co.**, 127 N. Main St., Wheaton, Ill., Owner Builds, **$1,350,000**, 100 frame RESIDENCES, WHEATON, ILL. Awarded Feb. 7.

Ed. Steigerwald & Son, 5310 W. State St., Milwaukee, Wis., CA, **$100,000**, HEAT TREATING BLDG., MILWAUKEE, WIS. Interstate Drop Forge Co., 4051 N. 27 St., Milwaukee, Wis. Morton L. Pereira & Assocs., 100 W. Monroe St., Chicago, 3, Ill., engrs. Awarded Feb. 4.

Krieghoff Co., 6661 French St., Detroit, Mich. CA $200,000, 1 story, rein.-con. WAREHOUSE, DETROIT, MICH. Bohn Aluminum & Brass Corp., 1400 Lafayette Bldg., Detroit, Mich. Lyle Zisler & Assoc., 628 McKerchey Bldg., Detroit, Mich., archts.

Krieghoff Co., 661 French Rd., Detroit, Mich. CA $300,000. Contr. BR-19-E, completing upper floors and interior 6, 7 and 8 stories Receiving HOSPITAL, DETROIT, MICH. City, Dpt. Health, A. R. Pisa, pres., Detroit, Mich. Bids Jan. 29. CD 1/24.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

February 26 Colorado — February 28 Kansas
February 29 Kansas, Missouri, South Dakota

STREETS AND ROADS

February 26, Colorado — February 28 Kansas
February 29 Kansas, Missouri, South Dakota

† **Tex., Amarillo**—ACADEMIC BLDG.—B.A. 2/26—U. S. Eng., Box 61, Tulsa, Okla., one 156x260 ft. academic bldg. at Amarillo Air Force Base, Inv. No. ENG 34-066-52-35, $350,000. CD 1/23.

Minn., Wadena—B.A. 2/27—Village, J. M. Enlen, clk., furnish materials, install bit. surf. incl. grading, portions of First, Second, Third, Fourth and Fifth Sts. SW., First and Second Sts. SE., Dayton, Emerson, Franklin, Garfield, Howard, Irving, Jackson, King and Lincoln Aves., SW., Colfax and Howard Aves. SE., $60,000. Plans deposit $10. H. S. Alexandria, engr.

Mo., St. Louis—B.A. 2/29—State Hy. Dpt., Jefferson City, remodel Terminal R. R. bridge for one 101 ft. steel plate girder span. Over $60,000. Rex Whitton, Jefferson City, ch. engr. CD 4/18/46.

TEXAS—RURAL DISTRIBUTION LINES—B.A. 2/29—Upshur Rural Electric Co-operative Corp., c/o D. B. Clonts, pres., Gilmer, construct approx. 152 mi. rural distr. lines, (126 mi. conversion and 26 mi. tie lines) in Rusk, Upshur, Gregg, Marion and Harrison Counties. Approx $195,000. Plans deposit $10. Freese & Nichols, 407 Dancger Bldg., Fort Worth, engrs. CD 2/29/48.

Minn., Fergus Falls—B.A. 3/3—City, I. Mickelson, clk., furnish 12,300 lin. ft. storm sewer, etc. $60,000. Plans deposit $10. Erwin Hensch, city engr. CD 9/27/48.

† **Colorado**—TRANSFORMER BANK—B.A. 3/4—Bureau Reclamation, Dpt. Interior, Bldg. 2 A, Denver Federal Center, Denver, installing transformer bank for Yuma sub-station, Colorado-Big Thompson Proj., Spec. 704C-237. L. N. McClellan, ch. engr.

† **Montana**—SUB-STATION MAIN CONTROL BOARD—B.A. 3/4—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Glendive, main control board without relays, and wiring for Dawson County sub-station, Fort Peck Proj., Spec. DS 3663, L. N. McClellan, ch. engr. CD 9/8/44.

† **Mont., Miles City**—LANDSCAPING—B.A. 3/4—Veterans Admin., Munitions Bldg., Wash., D. C., landscaping at veterans' hospital.

† **Texas**—B.A. 3/5—U. S. Dpt. Agriculture, Soil Conservation Service, 3600 McCart St., Fort Worth, flood control detention reservoirs, earthfill embankments, etc. on Pilot and Sister Grove Creek, approx. 6 mi. northeast of McKinney. No. 463-52.

BIDS ASKED—BUILDINGS

Minn., Golden Valley (Minneapolis P.O.)—SCHOOL—B.A. 2/26—Bd. Educ. Independent School Dist. 138, R. W. Henderson, Jr., 1 story, 60x105 ft., and 52x95 ft. school addn., 628 Mendelssohn Ave. $300,000. Plans deposit $15. Thorshov & Cerny, 400 Metropolitan Life Bldg., Minneapolis, archts.

Tex., Del Rio—STORAGE, etc.—B.A. 2/29—U. S. Eng., 606 Santa Fe Bldg., Galveston, 80,000 sq. ft. frame oxygen and hydrogen storage bldg., Approx. $250,000; 40,000 sq. ft. frame, base supply warehouse. Approx. $100,000. Norton, Mayfield, Flood & Floore, Box 1169, Bryan, archts. CD 1/4.

Tex., Longview—SCHOOLS—B.A. 2/29—Longview Independent School Dist., Longview, 2 unit elementary schools. $350,000. Extended date. Wyatt C. Hedrick, 904 Fort Worth Ave., Dallas, engr.-archt. CD 2/5.

Minn., Mankato — HOSPITAL — B.A. 3/11 — Immanuel Hospital Assn., Mankato, 3 story, 46x170 ft. hospital addn. $500,000, E. H. Schmidt & Co., Mankato, archts.

Tex., Lubbock—CLINIC—Bids Asked—Krueger, Hutchinson & Overton, 1301 Broadway, 3 story clinic, $700,000. Haynes & Kirby, 19 and Dixie Dr., archts. CD 1/3.

Tex., Taylor—WAREHOUSE—Bids Asked—Emzy Barker, Taylor, reconstruct warehouse and grain elevator, $125,000. CD 2/7.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Reinhart & Donovan Co., Commerce Exchange Bldg., Oklahoma City, Okla. LB **$319,589**, Mo. 38T1, 180.06 mi. rural distr. lines, 28.02 mi. changes, Dent, Iron, Reynolds, Shannon and Washington Counties; LB **$348,717**, Mo. 38T2, 191.82 mi. rural distr. lines, 32 mi. line changes, Bollinger, Cape Girardeau, Madison, Reynolds, St. Francois and Wayne Counties, MISSOURI. Black River Electric Co-operative, Ironton, Mo. Bids Jan. 24. CD 1/9.

▲ † **NORTH DAKOTA**—U. S. Eng., Fort Lincoln, P. O. Box 300, Bismarck.

Manhattan Constr. Co., Muskogee, Okla., LB $2,222,843, superstructure for highway bridge, Garrison Dam and Reservoir Proj., Inv. 52-26. Bids Feb. 1. CD 12/28.

† **List & Clark Constr. Co.**, Railway Exchange Bldg., Kansas City 6, Mo. LB **$736,583**, flood protection levees and diversion of canal Arkansas River and Cow Creek, near Hutchinson, Reno Co., CIVENG 34-066-52-37, KANSAS. Bids Feb. 7. CD 1/30.

† **Barfield Constr. Co.**, Box 608, Amarillo, Tex. CA $722,092, communications, storage bldgs., squadron hangars, officers' mess, cold storage warehouse, Smoky Hill Air Force Base, Eng. 23-028-52-19, SALINA, KAN. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Dec. 21, awarded Feb. 5. CD 1/9, under LB.

▲† **Walden, Fulton & Payne**, Lubbock, Tex. LB **$4,187,235**, airmen's dormitories, mess and admin. bldgs., bachelor officer quarters, utilities, Camp Phillips and Smoky Hill Air Force Base, Eng. 23-028-52-21, SALINA, KAN. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Feb. 8. CD 1/8.

† **Peter Kiewit & Sons**, Airport Branch P.O., Wichita, Kan. LB **$518,656**, est. $512,101, paving, grading, fencing Smoky Hill Air Force Base, Inv. 52-32, SALINA, KAN. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Feb. 8. CD 1/23.

† **Ford Allen**, Sonora, Tex., LB $66,605, flood control detention reservoir, near Brady, No. 451-52, TEXAS. Dpt. Agriculture, Soil Conservation Service, 3600 McCart St., Fort Worth, Tex. Bids Feb. 11. CD 1/16.

J. W. Mooreman & Son, Box 491, Snyder, Tex., CA $779,705, bridge and relocation 7.4 mi. railway line between Wylie and Lavon, TEXAS. Gulf, Colorado & Santa Fe Ry. Co., W. T. Donoho, ch. engr., Rosenberg and Strand Sts., Galveston, Tex. Bids Dec. 3, awarded Jan. 3. CD 12/12.

† **Tilson Built Co.**, 5516 Yale St., Houston, Tex., LB $199,999, est. $224,709, construct A.I.O. and Base Supply Warehouse at Big Spring Air Force Base, Inv. No. ENG 41-443-52-21, BIG SPRING, TEX. U. S. Eng., 1127 Texas & Pacific Bldg., Fort Worth, Tex. Bids Feb. 12. CD 2/6.

The Lummus Co., 385 Madison Ave., New York, N. Y. CA. Approx. $165,000, connecting products pipe line from proposed refinery 6 mi. north of Corpus Christi to city limits of CORPUS CHRISTI, TEX. Sunray Oil Corp., Phillower Bldg., Tulsa, Okla. CD 10/1.

Lone Star Gas Co., 1915 Wood St., Dallas, Tex., Force Account. $200,000. some distr. and transmission lines, FORT WORTH, TEX. area. CD 1/23.

Lone Star Gas Co., 1915 Wood St., Dallas, Tex., Purchase and Hire. Approx. $90,000. gas service lines, HICO, TEX.

Hill Co., Court House, Hillsboro, Tex., Force Account, $60,000. addnl. unit of road const. and surf. in Mt. Calm area, HILLSBORO, TEX. CD 11/30/50.

City, City Hall, 900 Brazos St., Houston, Tex., Purchase and Hire, $85,000. c. conc. paving and topping at various railway crossings thruout city; Own Forces, $75,000 some street imprvs. and surfacing, HOUSTON, TEX. CD 6/5.

Royce E. Wisenbaker and Robert E. Fix, 1415 N. Dixie St., Tyler, Tex., Own Forces. $150,000, sanitary sewerage sys.; $110,000, water sys., HURST, TEX. Wisenbaker, Fix & Assoc., 110 Bois d'Arc St., Tyler, Tex., engrs. CD 2/5, under Tarrant Co. is owner.

† **H. B. Zachry Co.**, Box 2570, San Antonio, Tex., LB $375,287, using concrete type paving;

Cage Brothers, 506 Travis Bldg., San Antonio, Tex., LB $308,485, using asph. type paving runway extens., taxiway and airfield lighting, Inv. No. Eng 41-243-52-45, LAREDO, TEX. U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex., Bids Feb. 6. CD 1/16.

City, Midland, Tex., Own Forces. $150,000, addnl. extension of c.i. water mains, MIDLAND, TEX. CD 9/21/50.

Dean Word, New Braunfels, Tex., LB $61,118, street imprvs. and imprvs. or reconstructing streets and curbs, NEW BRAUNFELS, TEX. City, New Braunfels, Tex. Bids Feb. 11. CD 2/1.

City, Temple, Tex., Own Forces, $68,000. some storm sewers, TEMPLE, TEX. CD 6/13/46.

Northwestern Engineering Co., 1311 St. Joe St., Rapid City, S. D. CA $213,000. water sys. imprvs., MILES CITY, MONT. City, Miles City, Mont. Bids Jan. 28. CD 1/9, under LB.

† **Willamette Iron & Steel**, 2860 N.W. Front Ave., Portland, Ore., LB, $155,963, Schedule 1, two 84 in. butterfly valves of Government design;

Pelton Water Wheel Co., 2929 19 St., San Francisco, Calif., LB, $216,254, Schedule 2, two 84 in. butterfly, plug or sphere-type valves of contractors design with operating units and handling equip., Colorado-Big Thompson Proj., Spec. DS 3608, COLORADO. Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo. Bids Feb. 7. CD 1/21.

† **A. A. & E. B. Jones Co.**, 692 Wyandot St., Denver, Colo., LB, $281,654, est. $378,000, base supply warehouse at Lowry Air Force Base, Inv. 52-43, DENVER, COLO. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Feb. 7. CD 1/15.

▲ † **Industrial Constructors**, 3860 Galapago, Denver, Colo., CA, $1,968,000, four 2 story, 67x341 ft. Technical Training bldgs., Lowry Air Force Base, DENVER, COLO. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Jan. 22. CD 1/29, under LB.

Schmidt Constr. Co., 10145 W. Colfax St., Denver, Colo., LB, $68,698, est. over $60,000, Schedule 1, 2, and 3, paving and sidewalk in Dist. 50, GRAND JUNCTION, COLO. City, City Hall, Grand Junction, Colo. Bids Feb. 5.

† **Lembke, Clough & King**, Box 245, Albuquerque, N. M., LB, $119,103, Lot 2, only, two new masonry type pump houses;

Harold P. Doty Drilling, Box 503, Garden City, Kan., LB, $87,068, Lot 1, only drilling, casing developing 2 water wells, Serial No. Eng 209-005-52-24, ALBUQUERQUE, N. M. U. S. Eng., P. O. Box 1438, Albuquerque, N. M. Bids Feb. 9.

† **Lembke-Clough & King Constr. Co.**, Box 245, Albuquerque, N. M., CA, $538,950, two 3 story airmen's dormitories, also outside aerial and electrical work, utilities, Serial No. Eng 29-005-52-25, ROSWELL, N. M. U. S. Eng., P. O. Box 1538, Albuquerque, N. M. Bids Jan. 9. CD 1/17, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Koch-Schroeder Constr. Co., 19 and Frederick Ave., St. Joseph, Mo. CA $434,982, est. $300,000. brick, concrete HIGH SCHOOL, ROLLA, MO. School Dist., Bd. Educ., Rolla, Mo. Bids Feb. 7. CD 1/18.

Gus Jacobson Constr. Co., Huron, S. D. LB $349,952, general constr. WOMENS DORMITORY, HURON, S. D. Huron College, Huron, S. D. Bids Jan. 29. CD 12/20.

A. Henson, Abilene, Tex., Purchase and Hire, Approx. $375,000. 55 frame DWELLINGS, concrete slab fdn. ABILENE, TEX. CD 1/11.

The Lummus Co., 385 Madison Ave., New York, N. Y. CA. Approx. $375,000, some addnl. products STORAGE at terminal near CORPUS CHRISTI, TEX. Sunray Oil Corp. Phillower Bldg., Tulsa, Okla.

▲† **J. W. Bateson Co., Inc.**, Irwin-Keasler Bldg., Dallas, Tex., LB $7,079,000, addnl. BUILDING and utilities, Spec. No. 5140, DALLAS, TEX. Veterans Admin., Munitions Bldg., Wash., D. C. Bids Feb. 12. CD 12/12.

Angus Wynne, Jr., 2311 Salerno St., Dallas, Tex. Own Forces. $345,000. some DUPLEXES, DALLAS, TEX. CD 1/9.

Circle Constr. Co., 5938 Curzon St., Fort Worth, Tex., Owner Builds. Approx. $345,000. 50 DWELLINGS, FORT WORTH, TEX. CD 2/6.

▲ **Brunson-White & Assoc.**, 1600 Plantation Rd., Dallas, Tex., LB $2,159,706. 310 two story, brick, masonry DWELLING units in 62 bldgs. for Negroes, concrete fdn., 4900 Blk. E. Rosedale St., FORT WORTH, TEX. Fort Worth Housing Auth., c/o Lealand Hunter, exec. dir., 500 W. Belknap St., Fort Worth, Tex. Bids Feb. 12. CD 1/16.

Frank Bailey Grain Co., Inc., 1518 Brennan St., Fort Worth, Tex., Purchase and Hire, $190,000, Grain STORAGE PLANT, HARLINGEN, TEX. CD 1/23.

▲ **Brown & Root, Inc.**, Box 3, Houston, Tex., CA. Approx. $1,750,000. Organiz Chemical PLANT unit, HOUSTON, TEX. Diamond Alkali Co., 4100 Clinton Dr., Houston, Tex. CD 2/6.

L. W. Helms, 71 E. Burgess St., Houston, Tex., Owner Builds. $425,000. Proj. 1, 50 DWELLINGS, HOUSTON, TEX. CD 1/30.

Cadenhead Constr. Co., Bossier City, La., Own Forces. $350,000. 3rd unit HOUSING, LONGVIEW, TEX. CD 4/11/51.

▲† **U. S. Eng.**, 1127 Texas & Pacific Bldg., Fort Worth, Tex., cancelled bids to have been opened Feb. 19, construct, manage and finance 1,000 Military HOUSING units at Camp Wolters Air Force Base, MINERAL WELLS, TEX. CD 1/15.

South Pasadena Plaza, c/o South Pasadena Corp., Pasadena, Tex. Owner Builds. $345,000. 35 DWELLINGS, Part of Proj. 2, PASADENA, TEX. CD 12/12/50.

▲ **R. F. Ball Constr. Co., Inc.**, 3200 W. Dallas St., Houston, Tex., CA $2,890,088, 400 HOUSING units, Tex. 6-6, SAN ANTONIO, TEX. San Antonio Housing Auth., 400 Labor St., San Antonio, Tex. Bids Jan. 22. CD 1/25, under LB.

George O. Teats & Sons, 414 W. Pikes Peak Ave., Colorado Springs, Colo., CA, $554,689, building structure for POWER PLANT, COLORADO SPRINGS, COLO. City, City Hall, Colorado Springs, Colo. Bids Jan. 28, awarded Feb. 7. CD 2/8, under LB.

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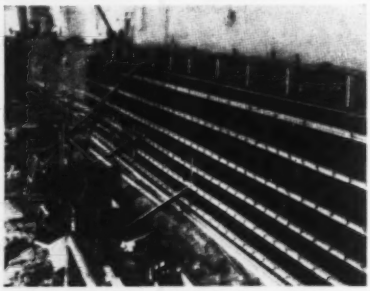

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FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
March 5 California
STREETS AND ROADS
March 5, 6 California

† Washington—B.A. 2/28—Bureau Reclamation, Dpt. Interior, Ephrata, landscaping O & M headquarters sites at Quincy pumping plant, Ephrata office bldg. and Winchester, Moses Lake, Mesa and Warden, Wash., Columbia Basin Proj., Spec. 117C-137. L. N. McClellan, Bldg. 1A, Denver Federal Center, Denver, Colo., ch. engr.

BIDS ASKED—BUILDINGS

▲ Wash., Whidbey Island—HOUSING—B.A. 2/29—Pub. Wks. Officer, Thirteenth Naval Dist., 1611 W. Wheeler St., Seattle, 300 housing units under Wherry Act $2,700,000. R. L. Durham & Assocs., 1100 Denny Way, Seattle, archts. CD 12/5, under LB.

† Wash., Yakima—TRAINING CENTER—B.A. 2/29—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, reconstruction of Pomona Well 5, Yakima Training Center, ENG 45-108-52-160. CD 11/5.

▲ Calif., San Francisco—HOSPITAL—B.A. About 3/1—Permanente Foundation Bd. of Trustees, Henry J. Kaiser Broadway and West MacArthur Blvd., Oakland, (selected list bidders) 6 story, 210-bed rein.-con. hospital, Geary, O'Farrell and Lyons Sts. and Joseph Ave. $2,300,000. Wolff & Phillips, Pearson-Fourth Avenue Bldg., Portland, Ore., archts. CD 4/25.

SOON LETS CONTRACT—BUILDINGS

▲ Calif., Burbank—HOSPITAL—Sisters of Charity of the House of Providence, 501 S. Buena Vista St., soon lets contract St. Josephs Hospital addn. $1,000,000. John N. Maloney, Central Bldg., Seattle, Wash., archt. CD 6/30/50.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ ARIZONA—State Hy. Dpt., Phoenix.
Larsen Constr. Co., Box 1790, Phoenix, Ariz., CA, $58,590, select material 1.25 mi. Superior-Winkleman Rd., Pinal Co.;
Phoenix-Tempe Stone Co., Box 1670, Phoenix, Ariz., CA, $141,263, select material, bit. road mix 11.5 mi. Selma Hy., Pinal Co.;
Vinson Constr. Co., Box 930, Phoenix, Ariz., CA, $527,995 c. conc. lining 1,200 ft. Claypool tunnel aggregate base, c. conc. pavement on tunnel roadway, Gila Co.;
Fisher Contg. Co., Box 4035 Phoenix, Ariz., CA, $324,820, subgrade seal, select material, aggregate base, bit. 3 mi. Globe-Show Low Rd., Gila Co.;
Dale F. Payne, 2347 W. Thomas Rd., Phoenix, Ariz., CA, $267,885, subgrade seal, select material, bit. 5.3 mi. Safford-State Line Rd., Graham Co.;
Arizona Sand & Rock, Box 596, Phoenix, Ariz., CA $118,836, select material, aggregate base, bit. road mix 2¼ mi. Page Spring Rd., Coconino Co.;
Sam Xavier Sand & Rock Co., Box 1301, Tucson, Ariz., CA, $119,707, select material aggregate base, bit. 10.5 mi. Douglas-Rodeo Rd., Cochise Co.;
A. J. Gilbert Co., Box 2277, Warren, Ariz., CA, $63,449, select material, bit. road mix and bit. roadways, Fort Huachuca and Bisbee, Cochise Co. Grand total $1,722,545.

† Arizona Sand & Rock Co., P. O. Box 596, Phoenix, Ariz., CA, $473,896, roads and railroad spur.
C & J Constr. Co., Box 41, Chico, Calif., CA $218,935 rehabilitation and addns. to electrical distr. sys. at Davis-Monthan Air Force Base, TUCSON, ARIZ., U. S. Eng., P.O. Box 17977, Foy Station, Los Angeles, 17 Calif. CD 11/7.

NEVADA—Directors of Dpt. Hys., State Office Bldg., Carson City.
Wells Cargo, Inc., 1775 E. 4 St., Reno, Nev., CA $559,829, construct 14.825 mi. portion State Hy. System between west slope of Mormon Mesa and east slope of Mormon Mesa, Clark Co. Bids Feb. 7. CD 1/24.

† Intermountain Plumbing Co. and Henry L. Horn, Connell, Wash., LB, $852,815, est. $796,065 constr. Lower and Upper Saddle Gap and PE 17 Pumping Plants, lateral PE-16.4 pipe siphon in Area P-1 and laterals in Area P-13, Columbia Basin Proj., Spec. DC 3613, WASHINGTON, Bureau Reclamation, Dpt. Interior, Ephrata, Wash. Bids Feb. 5. CD 12/13.

Harrison Bros. Co., 225 Wakefield Dr., Tacoma, Wash., CA $136,366, est. $190,000 clearing, grading, surf., Bantz Blvd., TACOMA, WASH. City, City Hall, Tacoma, Wash. Bids Feb. 11. CD 2/4.

▲ Oregon—State Hy. Comn., Highway Bldg., Salem,
Acme Constr. Co., 1991 E. 19 St., Eugene, Ore., CA $346,087, grading, paving 11.45 mi. Coos Bay-Roseburg Hy., FAP F-29 (5), Douglas Co.;
Fundeburk Constr. Co., Sutherlin, Ore., CA $267,180, oil mat surf. 4 mi. North Umpqua Rd. FAP S-14 (9), Douglas Co.;
Roger Constr. Co., 11760 N. E. Glisan St., Portland, Ore., CA, $278,542, base and paving 9.21 mi. North Santiam Hy. FAP S-220 (5), Marion Co.;
P. B. Doherty & Son, 3105 N. E. 55 St., Portland, Ore., CA $59,620, rock production, Silver Creek Falls Hy., Marion Co.;

R. A. Heintz Constr. Co., 211 N. E. Columbia Blvd., Portland, Ore., CA, $663,845, grading 6.9 mi., grading and oil mat surf. 4.42 mi. West Portland-Hubbard Hy. FAP-BFI 303 (4) and 303 (5), Washington and Clackamas Counties. Grand total $1,615,274. Bids Jan. 31. CD 1/22.

OREGON—State Hy. Comn., Highway Bldg., Salem,
John A. Logan, 3824 N. E. 74 St., Portland, Ore., CA, $218,144, rock surf. 2.59 mi. Coos River Hy. FAP S-5 (3), Coos Co.;
Babler & Rogers, 4617 S. E. Milwaukee St., Portland, Ore., CA, $134,211, cinder base 4.93 mi., oil mat surf. 7.53 mi. Powell Butte Hy. FAP S-98 (2) and S-118 (1), Crook Co.;
Porter W. Yett, 6500 N. E. Ainsworth St., Portland, Ore., CA, $85,603, paving 5.24 mi. Nehalem Hy. FAP S-213 (15), Washington Co. Grand total $437,958. Bids Feb. 1. CD 1/22.

† **C. J. Montag & Sons**, 7805 N. E. Halsey St., Portland, Ore., CA, $136,074, Columbia River crossing, Westport-Cathlamet 115 kv line, Inv. 6276, Clatsop and Wahkiakum Counties, OREGON-WASHINGTON. Bonneville Power Admin., 827 N. E. Oregon St., Portland, Ore. Bids Feb. 7. CD 1/22.

▲† **R. V. Lloyd & Co.**, Coachella, Calif., LB, $1,598,798 est. $1,593,410, earthwork, pipe lines and structures for laterals 97,98,99.4 and 99.8-1.51 and sublaterals, Part 2 of Unit 9, Coachella Valley distribution system, All-American Canal System, Spec. DC 3632, CALIFORNIA. Bureau Reclamation, Dpt Interior, Coachella, Calif. Bids Feb. 7. CD 1/9.

▲ **Davies, Keusder & Brown**, 4915 Exposition St., Los Angeles, Calif., **E. S. McKittrick Co.**, 7839 Santa Fe Ave., Huntington Park, Calif. and **Macco Corp.**, 14409 Paramount Bldg., Paramount, Calif., CA, $2,238,640 steel, concrete transit shed and certain plumbing installations at Berth 196-197, Wilmington, LOS ANGELES, CALIF. Los Angeles Harbor Dpt., City Hall, Los Angeles, Calif. Bids Jan. 23. CD 12/12.

BUILDINGS

BIDS ASKED—HEAVY CONSTRUCTION

† **Westcon Corp.**, 8638 W. 3 St., Los Angeles, Calif., CA, $414,900, SCHOOL at Neillis Air Force Base, LAS VEGAS, NEV. Housing & Home Finance Agency, Las Vegas, Nev. Walter & Harris Sharp, 1806 S. Main St., Las Vegas, Nev., archts. Bids Nov. 15.

H. Halvorson, Inc.; Ziegler Bldg., Spokane, Wash., CA est. $700,000, 1 story 200x500 FACTORY addn., SPOKANE, WASH. Columbia Electric & Mfg. Co., W1024 Ide St., Spokane, Wash. Bids Nov. 7. CD 11/14, under LB.

McDonald Bros., 6014 W. Adams Blvd., Los Angeles, Calif., LB, $896,500, Walton Junior High SCHOOL, COMPTON, CALIF. Compton Union High School Dist., 601 S. Acacia St., Compton, Calif. Bids Feb. 5. CD 12/27.

Hudson Constr. Co., 1277 W. 24 St., Los Angeles, Calif., LB, $370,200, constr. South Primary SCHOOL, LENNOX, CALIF. Lennox School Dist., 10319 Firmona St., Lennox, Calif. Bids Jan. 31.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

† Alaska, College—UTILITY SYSTEM—B.A. 3/26—Alaska P. Wks., Dpt. Interior, Juneau, addns., imprvs. to University of Alaska utility sys., Proj. Aaa 50-A-117. $155,000. Plans deposit $25. V. Rivers, Reed Bldg., Anchorage, engr.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ † **O. B. Ashbach & Sons**, 2975 Hamline Ave. N., and **Jay W. Craig Co.**, 1814 N. E. California St., both St. Paul, Minn., LB $1,793,715, est. $1,605,061, approx. 55,000 cu. yd. wet mixed concrete, aggregate, grout, etc. for Fort Richardson and 105,000 cu. yd. for Elmendorf Air Force Base, ENG. 95-507-52-44, ALASKA. U. S. Eng., (APO 942, c/o PM, Seattle, Wash.) Anchorage, Alaska. Bids Feb. 6. CD 1/15.

U. S. POSSESSIONS

BIDS ASKED—HEAVY CONSTRUCTION

† **Puerto Rico, Aguadilla**—AIR BASE—B.A. 3/19—U. S. Eng., P. O. Box 4970, Jacksonville 1, Fla., parking stubs, connecting taxiways, strengthening pavement, Ramey Air Force Base, Serial No. ENG 08-123-52-108. Plans deposit $5.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

N. B., Chathan—LIGHTING FACILITIES—B.A. 2/26—F. T. Collins, secy. Dpt. Transport, Ottawa, Ont., airport lighting facilities at airport incl. installation approach lights and runway and taxiway lighting. Approx. $75,000. Plans deposit $25. CD 1/4.

Ont., Toronto—WATER RESERVOIR—B.A. 2/26—Defence Constr. Ltd., 441 Queen's Quay W., 3 m. g. water reservoir at Downsview Air Force Base. Plans deposit $100.

Ont., Granton—B.A. 3/3—C. A. Barnett, clk. Blanchard Twp., R. R. No. 1, Granton, 80 ft. re-in.con. rigid frame bridge, 20 ft. roadway approach, fill on part Lot 31, South Boundary Approx. $82,000. Plans deposit $15. C. C. Parker & Assocs. Ltd., 63 John St., S., Hamilton, engr.

Ont., Picton—B.A. 3/3—Chairman and Members, c/o Public Utilities Comn., Picton, Ont., water purification plant extension, incl. rein.con., mixing chambers, settling basin, filters, filter house, underdrains, piping controllers, etc., some aterations to existing structures and intake pipe. Approx. $250,000. Plans deposit $25. J. F. MacLaren Assocs., 705 Yonge St., Toronto, engrs.

Ont., Clinton—HEATING PLANT—B.A. 3/4—Defence Construction (1951) Ltd, 441 Queens Quay W., Toronto, central heating plant alterations at Air Force Base and steam distr. sys. Plans deposit $100. R. P. Opie, c/o owner, engr.

Que., Bagotville—STORAGE BLDGS—B.A. 3/4—M. P. McAndrew, engr. Defence Constr. Ltd., 1247 Guy St., Montreal, supply, erect and finish 2 standard explosive storage buildings at R.C.A.F. Station, Job 1814, Approx. $150,000. Plans deposit $100.

BIDS ASKED—BUILDINGS

Ont., Hanover—SCHOOL—B.A. 2/25—Secy. High School Bd., Hanover, 3 story, 100x200 ft., brick, steel, high school addn. Approx. $400,000. Barnett & Rieder, 644 Bayview Ave., Toronto, archts. CD 9/19.

▲ **Ont., Clarkson**—B.A. 3/3—British American Oil Co., Bay and College St., Toronto, grease plant at Clarkson refinery, mostly 1 story with 3 story section, 100x250 ft. steel, rein.-con., concrete block. $1,-500,000 N. A. Armstrong, 19 Melinda St., Toronto, archt. CD 11/8.

Ont., Leamington—SCHOOL—B.A. 3/3—P. Jones, secy. Public School Bd., Leamington, 11-classroom school. Approx. $300,000. A. J. Storey, 21 Seventh St., Chatham, archt. Plans deposit $25.

Alta., Namao—BUILDINGS—B.A. 3/4—W. J. Millhausen, engr., 400 Kensington Bldg., Winnipeg, Man., erecting 9 buildings, for Defence Construction (1951) Ltd. 400 Kensington Bldg., Winnipeg, Man. Plans deposit $100.

▲ **Ont., Toronto**—ADMINISTRATION, etc.—B.A. 3/7—Northwestern General Hospital, Dr. S. J. Rowley, chn. Hospital Com., 335 Oakwood Ave., superstructure 6 story, 45x188 ft. administration and operating, 2 story, 124x140 ft. operating, 1½ story, 42x72 ft. boiler plant, $1,000,000. Plans deposit $25. John P. Parkin & Assocs., 717 Church St., archts.

N. B., Fredericton—SERVICE LABORATORY—B.A. 3/19—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., science service laboratory. Plans deposit $100. C. Gustave Brault, ch. archt. P. S. Hunter, Old Post Office Bldg., St. John, N. B., dist. archt.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

W. C. Brennan Contg. Co., 400 Gage Ave. N., Hamilton, Ont., CA, $380,000, ground school at Air Force Base, CENTRALIA, ONT. Defence Constr. (1951) Ltd., 441 Queen's Quay W., Toronto, Ont. Bids Jan. 15, awarded Feb. 7. CD 1/8.

Ross-Meagher Ltd., 9 Echo Dr., Ottawa, Ont., CA, Approx. $450,000, Central HEATING PLANT at Uplands Airport, Job. 1673, OTTAWA, ONT. Defence Constr. Ltd., 441 Queen's Quay W., Toronto, Ont. Bids Dc. 11. CD 12/3.

Foster-Wheeler Ltd., St. Catherines, Ont., CA, $568,517 supplying 11 Steam GENERATING UNITS for various stations, ST. CATHERINES, ONT. Defence Constr. Ltd., 441 Queens Way W., Toronto, 2B, Ont. R. P. Opie, c/o owner, engr.

Geo. W. Porter Constr. Co. Ltd., Lawrence Ave. W., Toronto, Ont., LB, $113,020, b. conc. extension Dundas St. East from Rhodes Ave. to Kingston Rd., TORONTO, ONT. City, City Hall, Toronto, Ont. CD 2/19.

John Maguire Contg. Co. Ltd., 24 Birch Ave., Toronto, Ont., LB, Approx. $117,000, sewer 5 ft. dia. horseshoe sewer in tunnel on Chendenau Ave., TORONTO, ONT. City, A. A. Lamport, mayor, City Hall, Toronto, Ont. CD 8/10/44.

Keystone Contractors Ltd., McDougal St., Windsor, Ont., CA, $132,568, laying 36 and 42 in. concrete pressure water pipe, WINDSOR, ONT. Public Utilities Comn., Water Div., 607 Canada Bldg., Windsor, Ont. Bids Feb. 7, awarded Feb. 8. CD 1/24.

J. Accurso Reg'd, 10150 St. Lawrence St., Montreal, Que., CA, $646,833, 1,100 ft. traffic tunnel, 75 ft. wide, on Christophe Colomb St., MONTREAL, QUE. Municipality, City Hall, Montreal, Que. Bids Feb. 2. CD 12/10.

Smith Brothers & Wilson Ltd., 104 Dominion Bank Bldg., Regina, Sask., CA, $381,250 ground instructional school at R.C.A.F. Station, REGINA, SASK. Defense Constr. Ltd., 400 Kensington Bldg., Winnipeg, Man. M. J. Milhausen, c/o owner, engr.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Anglin—Norcross Ontario Ltd.**, 57 Bloor St. W., Toronto, 5, Ont., CA, $17,000,000, 1 story, assembly PLANT OAKVILLE, ONT. Ford Motor Co. of Canada Ltd., 2780 Sandwich St., Windsor, Ont. Awarded Feb. 9.

Canadian Doughnut Co. Ltd., 127 Dufferin St., Trenton, Ont. cancelled bids, 3 story, 100x140 ft. PLANT addns., TRENTON, ONT. Est. $225,000. CD 11/28.

Desourdy Constr. Ltd., 143 North St., Cowansville, Que., CA, $500,000, 1 story 100x750 ft., concrete brick, structural steel FACTORY, Westmount St., COWANSVILLE, QUE. Municipality, Cowansvile, Que. Albany Felt Co., lessee. CD 1/23, under LB.

Carolus Marquis, 282 Pare St., Granby, Que., CA Approx. $150,000, 100x150 ft., concrete brick block FACTORY, GRANBY, QUE. A. Philippus & V. Buisbank, Bussum, Holland. CD 1/30, under CA.

OFFICIAL PROPOSALS

appear here each Thursday. Proposal advertisements accepted up to 10:30 a.m. Friday for the issue dated the following Thursday.

Aswan Dam Hydro Electric Scheme

EGYPTIAN GOVERNMENT
MINISTRY OF PUBLIC WORKS
HYDRO ELECTRIC POWER COMMISSION
ADJUDICATION FOR AUXILIARY TRAVELLING CRANES AND HOIST BLOCKS

The Egyptian Government hereby announces that Tenders are invited for the supply, erection and maintenance of Auxiliary Travelling Cranes and Hoist Blocks required for the Hydro-Electric Power Station at the Aswan Dam, all according to the Specification.

The Tender Documents comprising Conditions of Contract, Specification and Tender Drawings for the entire works may be obtained as from 15th February 1952, either at the Hydro-Electric Power Department, Ministry of Public Works, Cairo, or the office of the Consulting Engineers of the Egyptian Government, Kennedy and Donkin, 12, Caxton Street, London S. W. 1, or from the Royal Egyptian Embassies and Legations in Washington, Paris, Stockholm, Berne, Brussels, Rome and Frankfurt.

Tenderers must pay LE.10 (equivalent to $28.80 in American Dollars), which covers the cost of the complete set of Tender Documents and Drawings. This sum must be paid to the National Bank of Egypt either in Cairo or in London to the credit of Hydro-Electric Power Department, Ministry of Public Works, or at one of the above mentioned Embassies or Legations, and will not be refunded.

Upon presentation of the Bank receipt to either the Hydro-Electric Power Department in Cairo or the Consulting Engineers in London, or on the payment of the required sum at one of the above mentioned Embassies or Legations, as the case may be, tenderers will be supplied with the complete set of Tender Documents above referred to.

When submitting their tenders, tenderers must pay a provisional deposit of two percent of the value of the Contract with a maximum of LE.1000 (One thousand Egyptian Pounds) to the National Bank of Egypt in Cairo, or in London to the credit of Hydro-Electric Power Department, Ministry of Public Works. Letters of Guarantee from approved Banks will be accepted in lieu of cash. A list of approved banks is given in the Specification.

The Contractor to be entrusted with these works will, after consideration of tenders by the Hydro-Electric Power Commission and the Consulting Engineers, be nominated by the Egyptian Government and the work shall be executed as a sub-contract to the order of the main contractor for the Civil Engineering Works.

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3664) will be received at Coulee Dam, Washington, until March 13, 1952, for furnishing labor and materials for: Terrazzo work in Grand Coulee Power Plants, Pumping Plant, Machine Shop and Coulee Columbia Basin Project, Washington. Location: 30 miles northeast of Odair, Washington. Principal items are: Excavation of concrete, 1½ inches in depth, 1,300 sq. ft.; terrazzo work, lump sum; and other work. Completion time 200 days. For particulars, address Bureau of Reclamation, Coulee Dam, Washington; or Building 53, Denver Federal Center, Denver, Colorado.

(Continued on following page)

OFFICIAL PROPOSALS

Bids: March 6, 1952

Improvements to Various Utilities

Sealed proposals will be received at the office of the Borough Secretary by the Municipal Authority of the Borough of Union City, Union City, Pennsylvania, until 8:00 P.M., on the 6th day of March, 1952, for the construction of improvements to the various utilities of the Borough of Union City.

SECTION I consists of water filtration plant, clear water reservoir and connecting pipe lines.

SECTION II consists of extensions of water mains on various Borough streets, according to schedule in bidding sheet.

SECTION III consists of additions and improvements to the sewage treatment plant and placing of equipment, pumps and making alterations to north side sewage lift station of the Borough of Union City.

SECTION IV consists of construction of sewers in the Borough of Union City in accordance with schedule of bidding sheet.

Separate bids must be made for general construction and for plumbing, heating and electrical. The bids on each section will be considered as a unit. Contractor shall furnish financial statement and list of last six (6) projects completed.

Each proposal shall be accompanied by a certified check in an amount not less than five (5%) percent of the total bid, in accordance with the provisions contained in the specifications.

Copies of the Contract Documents, including plans and specifications, may be obtained from the office of Hill & Hill Engineers, 8 Gibson Street, North East, Pa., or from the office of the Borough Secretary or office of the Secretary of the Municipal Authority, upon deposit of Twenty ($20.00) Dollars for each section. A refund will be made in full to actual bidders for return of one set in good condition within ten (10) days after closing date for receipt of bids. Refund for return of all other sets in good condition within the same period will be fifty (50%) percent of the deposit.

The Municipal Authority of the Borough of Union City reserves the right to reject any or all bids or to reject such parts as would exceed the appropriation for the proposed work.

The Borough of Union City has made CHP-4C application, Government Control No. J-10766, to the National Production Authority for priorities and has received CMP-13, Authorization to Commence Construction, with a priority of DO-28 and an allocation T-S which will be extended to all contractors bidding on any of this work.

Bids on this work shall be binding for a period of thirty (30) days after closing date for receipt of bids.

MUNICIPAL AUTHORITY OF THE BOROUGH OF UNION CITY
George Michael, Secretary

Bids: March 13, 1952

Glencoe Water Works

GLENCOE, ILLINOIS

Sealed bids will be received at the office of the Village Clerk in the Village Hall, Glencoe, Illinois until 8:00 o'clock P.M., March 13, 1952 and at that time publicly opened and read in the Board Room at the Village Hall, on the following water works improvement contracts:

A—Structures and Piping
B—Mixing Equipment
C—Filter Equipment
D—Pumping Equipment

Plans and specifications are on file and may be examined at the office of the Village Clerk and of Mr. George R. Young, Village Engineer, Village Hall, Glencoe, Illinois, and at the office of Alvord, Burdick & Howson, Engineers, 20 N. Wacker Drive, Chicago 6, Illinois.

Plans and specifications may be obtained by depositing cash or a certified check payable to the Village of Glencoe or to Alvord, Burdick & Howson in the amount of $25.00 for Contract A, $10.00 for Contract B, $20.00 for Contract C, and $5.00 for Contract D, for each set of documents so obtained. The Amount of the deposit for one set of documents will be refunded to each actual bidder who returns the plans and documents in good condition within ten days after the opening of bids. Additional copies of the contract documents may be bought for the same price, with no refund.

Each bid must be accompanied by a certified check or bidder's bond in a surety company authorized to do business in the State of Illinois for ten (10%) per cent of the bid, payable to the order of the Village of Glencoe, Illinois, which sum shall be forfeited in case the bidder fails to enter into contract within ten (10) days after the contract has been awarded to him.

The successful bidder will be required to furnish a surety bond satisfactory to the Village in a surety company authorized to do business in the State of Illinois, covering the full amount of his contract.

No bid may be withdrawn after the time for opening bids is passed.

The Village reserves the right to reject any or all bids or waive any informality in any bid, and to accept any considered advantage to the Village.

Bidders are notified that the successful bidder will be required to pay not less than the prevailing rate of wages for workmen engaged in the work, in accordance with the provisions of An Act of The General Assembly of the State of Illinois entitled 'An Act Regulating Wages of Laborers, Mechanics and Other Workmen Employed Under Contracts For Public Works', approved June 26, 1941.

(SIGNED) H. B. BRAY
Village Clerk
Glencoe, Illinois

Bids: March 6, 1952

Sanitary Sewerage Facilities

Sealed bids will be received by the Board of County Supervisors of Fairfax County, Virginia, at the Office of the Sanitary Engineer, County of Fairfax, VEPCO Building, Fairfax, Virginia, until 2:00 O'CLOCK P.M., E.S.T., THURSDAY, MARCH 6, 1952, for the installation of approximately 28,000 feet of 8" to 12" sanitary sewers, and appurtenant facilities, in Sanitary District No. 1, which has been designated as "Contract No. 16", and promptly thereafter they will be publicly opened and read in the Board of County Supervisors' Room, County Office Building, Fairfax, Virginia.

Plans, specifications and contract documents may be examined at the Office of Sanitary Engineer, and copies thereof may be obtained from Massey Engineers, Consulting Engineers, Ford Building, Fairfax, Virginia, upon payment of $15.00 in cash for each set, which sum will be refunded upon the return of such documents in good condition within ten (10) days after the bid date. Bids must be submitted on the forms supplied for this purpose and in strict accordance with the instructions therefor. Each bidder will be required to show evidence of possession of a certificate of registration as a contractor in the Commonwealth of Virginia before his bid will be considered.

Each bid must be accompanied by a bid bond or certified check made payable to the County of Fairfax, Virginia, in the amount of at least five per centum (5%) of the total amount of the bid. The successful bidder will be required to furnish a performance and maintenance bond in a penal sum equal to the full contract price.

The time for completion of the contract is 180 consecutive calendar days and liquidated damages in the amount of $25.00 per day will be assessed in the event of delay or default in the completion of the contract.

No bid may be withdrawn for a period of thirty (30) days after the actual opening thereof, and the right is reserved to waive any informality therein and to reject any or all bids.

James J. Corbalis, Jr.
Sanitary Engineer
County of Fairfax
Fairfax, Virginia

Bids: March 6, 1952

10,000 Wooden Pallets for Marine Terminal, Port Newark

THE PORT OF NEW YORK AUTHORITY
PROPOSAL NO. 703

Sealed proposals for the supplying of 10,000 Wooden Pallets for the Port Newark Marine Terminal, Port Newark, N. J., will be received at the office of the Director of Purchase of The Port of New York Authority, Room 1402, 111 8th Ave., New York, until 11:00 A.M., Thursday, March 6, 1952, at which time and place proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, February 21, 1952

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3657) will be received by Bureau of Reclamation, Loveland, Colorado, until March 11, 1952, and then publicly opened for furnishing labor and materials and performing all work for the construction of St. Vrain Supply Canal, station 104+90 to station 520+75, Colorado-Big Thompson Project, Colorado. The work is situated in the vicinity of Lyons, Colorado. Principal items are approximately: 533,000 cu.yds. excavation; 17,000 cu.yds. concrete; 223,000 lbs. steel liner in concrete siphon; 0.8 mile of tunnels, including excavation, installing tunnel supports, and placing concrete lining; and other work. Time allowed for completion will be 700 days. For particulars, address Bureau of Reclamation, Loveland, Colorado; or Building 53, Denver Federal Center, Denver, Colorado.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3662) will be received at Sacramento, California, until April 2, 1952, for furnishing labor and materials for: Folsom Power Plant and appurtenant works, Folsom Unit, American River Division, Central Valley Project, California. Location: 17 miles northeast of Sacramento, California. Principal items are: Excavation, 627,000 cu.yds.; furnishing and handling cement, 76,000 barrels; furnishing and placing reinforcement bars, 5,140,000 lbs.; concrete, 41,000 cu.yds.; furnishing and erecting steel framing, 925,000 lbs.; furnishing and installing metalwork, 510,000 lbs.; installing metalwork, 706,000 lbs.; and other work. Completion time 790 days. For particulars, address Bureau of Reclamation, Sacramento, California; or Building 53, Denver Federal Center, Denver, Colorado.

Engineering News-Record

Reaches Your Local Contractors

Its distribution among the contractors of any one state is in proportion to the number of contractors situated in that state. The Official Proposal Columns of *Engineering News-Record* offer precisely the same efficient service to municipalities, counties, state and federal departments in every section of the United States.

OFFICIAL PROPOSALS

Bids: February 27, 1952

New York State Highway Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time, February 27, 1952, by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects: Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract is indicated below. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1				
		G. L. NICKERSON, District Engr., 353 Broadway, Albany, N. Y.				
Albany	C.T. 52-1	New York State Thruway-Catskill Section Subdivison 1-3	11.68	Grading & Drainage	$120,000 Plans $50	$2,100,000
		DISTRICT No. 2				
		L. KETCHUM, District Engr., 109 No. Genesee St., Utica, N. Y.				
5 Counties 2 Cities	FARC 52-12	Installation of Automatic Recording Traffic Counters in Dist. 2 Proj. SWHP-1(8)	....	Installation of 11 Automatic Record. Traffic Counters	$1,300 Plans $10	$22,440
		DISTRICT No. 3				
		WILLIAM ROBINSON, District Engr., Weigh Lock Bldg., Syracuse 1, N. Y.				
4 Counties 2 Cities	FARC 52-13	Installation of Automatic Recording Traffic Counters in Dist. 3 Proj. SWHP-1(8)	....	Installation of 9 Automatic Record. Traffic Counters	1,100 Plans $10	19,080
Cayuga	FARC 52-7	Montezuma-Cayuga-Union Springs Pt. 1 S. H. 8518 Proj. F-1059(1)	2.71	9' Cem. Conc. Pavt. 24'-36' Wide	16,000 Plans $10	318,000
		DISTRICT No. 4				
		A. R. MELLIGAN, District Engr., Barge Canal Terminal, Rochester 1, N. Y.				
Livingston	FARC 52-17	Dansville-Conesus Pts. 1, 2 & 3 S. H. 1574-1702 Proj. F-579(3)	2.65	Asp. Conc. Ty. 1A, Opt.	27,000 Plans $10	493,000
Genesee & Monroe	OT 52-3 RC 52-22 ST 52-3	New York State Thruway-Ontario Section Subdivisions 6A, 6B & 7A Rigs-Mumford S. H. 1284 Scottsville-Chili, S. H. 5279 Beulah Rd.; Winslow Rd.; Wheatland Center Rd.; Palmer Rd.; Baker Rd.; Cedars Ave.; Union St.; Sheffer Rd.	9.26	9" Cem. Conc. Pavt. 2 @ 25' Wide = 7.93 Mi. Asp. Conc. Ty. 1A, Opt. = 0.49 Mi. Misc. Work = 0.84 Mi. Conc. Box Culv. Br. 20' 9 1/2" Span.	188,000 Plans $50	3,421,000
		DISTRICT No. 6				
		H. F. BRUHM, District Engr., State Office Bldg., Hornell, N. Y.				
Schuyler	FASS 52-3	Hammonds Corners-Tyrone C. R. 82* Proj. S-300(2)	1.82	D. S. T. Broken Stone	8,500 Plans $10	161,000
		DISTRICT No. 8				
		J. S. BINBY, District Engr., Pleasant Valley Road, Poughkeepsie, New York				
Dutchess	FARC 52-15	Wiccopee-Beekman S. H. 627 Putnam County Line-Stormville Pt. 2, S. H. 9226 Proj. F-468(10)	1.51	9" Cem. Conc. Pavt. 24' Wide	19,000 Plans $10	327,000
Ulster	R.C. 52-19	Ashokan Boulevard (North Side) S. H. 47-5 Kingston-West Hurley, S. H. 5173	9.59	Landscaping	$900 Plans $15	$16,000
		DISTRICT No. 9				
		F. W. DONOVAN, District Engr., 71 Frederick St., Binghamton 21F, N. Y.				
Broome	FASH 52-2	Johnson City, Route 17 Connection Proj. U.-1092 (3) (0.27 Access)	0.82	Grading & Drainage = 0.79 Mi. Misc. Work = 0.03 Mi. (Access Drives Asp. Conc. Ty. 1A Opt = 0.27 Mi.)	24,000 Plans $15	411,000
		DISTRICT No. 10				
		J. J. DARCY, District Engr., Montauk Highway at Little East Neck Rd., Babylon, Long Island, N. Y.				
Nassau & Suffolk	NSP 52-1 SSP 52-1	Northern State Parkway Southern State Parkway	48.55	Screen Planting	5,000 Plans $10	90,000

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders".

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
Supt. of Public Works

Bids: February 26, 1952

Delaware Memorial Bridge

CONTRACT NO. 22
PLANTING OPERATIONS

Sealed proposals for Planting Operations along the approaches to the Delaware Memorial Bridge, will be received by the Delaware State Highway Department at the office of the Director, Delaware Crossing Division, Administration Building, Delaware Memorial Bridge, Delaware, until 12 o'clock noon Eastern Standard Time, February 26, 1952 at which time and place said proposals will be publicly opened and read.

The work involves the following approximate principal quantities:—

Topsoil	1150 cu. yds.
Commercial Fertilizer	575 lbs.
Grass Seeding	1000 sq. yds.
Sod	3000 sq. ft.
Major Trees	530
Minor Trees	509
Shrubs	360
Vines	281

Performance of this Contract shall begin promptly after execution of the Contract and shall be completed on or before May 15, 1952.

Monthly payments will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the Department.

Each proposal must be accompanied by an acceptable surety bond or certified check to the amount of at least ten (10) per cent of the total amount of the proposal.

The Contract will be awarded or proposals rejected within twenty (20) days from the date of opening proposals. The right is reserved to reject any or all bids.

One set of the Plans and two copies of the Specifications may be obtained from the Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y., after February 8, 1952, upon payment of $10.00.

Any prospective bidder who has made such a deposit may secure extra blueprint copies of the Plans upon payment of 50 cents per drawing and an extra copy of the Specifications upon payment of $2.50 per copy.

Plans and Specifications need not be returned to the Engineers, and the above payments will not be refunded.

The Plans and Specifications and other contract documents may be examined at the office of the Engineer, Howard, Needles, Tammen & Bergendoff, or at the Engineers' project office located north of and adjacent to the west abutment of the Delaware Memorial Bridge in the state of Delaware.

State Highway Department
by: J. Gordon Smith, Chairman
W. A. McWilliams, Director
Delaware Crossing Division
February 4, 1952

Bids: March 11, 1952

City of Wilmington, Delaware

Contract No. 8

Sealed proposals for furnishing materials and labor to construct Storm Drains, Sewers and Pumping Station, Contract No. 8 of the City of Wilmington's Sewage Treatment Program will be received from qualified bidders by the Board of Directors of the Street and Sewer Department, Room 251, City Hall, until 2:30 P.M., Eastern Standard Time, March 11, 1952, at which time and place they will be publicly opened and read aloud.

Each proposal shall be submitted in a sealed envelope which shall be marked to clearly indicate its contents. If the proposal is forwarded by mail, it shall be enclosed in an additional envelope addressed to the Board of Directors of the Street and Sewer Department, City of Wilmington, Delaware. If submitted other than by mail, it shall be delivered to Room 260, City Hall.

The work embraces the construction of approximately 5300 feet of 15 inch to 60 inch diameter reinforced concrete pipe storm drains, 450 feet of 17" x 18" and 13" x 22" corrugated metal pipe arch, 4200 feet of 6 inch to 18 inch vitrified clay pipe sanitary sewers and house connections, 410 feet of 12 inch and 16 inch cast-iron pipe sanitary sewers and force main, a reinforced concrete and brick pumping station and other miscellaneous and appurtenant work. A portion of the work will be supported on timber piles. The work is located in the 12th to 27th Street area of East Wilmington, certain portions being on the property of the P. B. & W. R. R. A rating has been obtained for this work from N.P.A.

Drawings and specifications may be obtained from the office of the Board of Directors of the Street and Sewer Department of the City of Wilmington, Room 260, City Hall, or from the office of Whitman, Requardt and Associates, 1304 St. Paul Street, Baltimore 2, Maryland, upon deposit of Twenty-five Dollars ($25.00) for each set of drawing and specifications, which deposit will be refunded upon return of the plans and specifications in good condition. The drawings which are furnished prospective bidders for a deposit are one-half (1/2) scale reproductions of the originals. If a bidder desires a set of drawings which are full scale reproductions of the originals, he may obtain them upon payment of Ten Dollars ($10.00) for each set desired which payment will not be refunded.

The Board of Directors of the Street and Sewer Department reserves the right to reject any or all bids and to accept the bid which in its opinion best serves the interests of the City.

By order of
Board of Directors of the Street and Sewer Department
Vaughan Clavey—President
Attested
James J. Livingstone, Secretary

OFFICIAL PROPOSALS
(Continued from preceding page)

Bids: March 7, 1952

Water Storage Standpipe

WATER STORAGE STANDPIPE, TURBINE PUMPS AND STANDBY POWER UNIT IMPROVEMENTS FOR GALENA, ILLINOIS

Sealed proposals will be received by the City of Galena, Illinois, at the Galena City Hall, until the hour of 7:00 P.M. o'clock, Central Standard Time, on the 7th day of March, 1952, for providing all labor, materials, services, and performing all work necessary for and incidental to the construction and completion of the following. At the above time and place, said bids will be publicly opened and read aloud.

I. Waterworks Improvements

The contract documents, including plans and specifications, are on file at the office of the Clerk of the City at the City Hall, Galena, Illinois, and at the office of Marr, Green and Opper, Engineers, 3329 S. Michigan Avenue, Chicago, Illinois. Copies of the documents including plans may be obtained by depositing ten dollars ($10.00) with the City Clerk or the Engineers for each set of documents so obtained. The amount of the deposit for one set of documents will be refunded to each actual bidder who returns the plans and documents in good condition within 10 days after the opening of bids. Five dollars ($5.00) will be refunded for each of all other sets of documents so returned.

Contract A

one 750,000 gallon steel standpipe water storage tank complete in place on foundations furnished by others.

OR

one 525,000 gallon steel standpipe water storage tank complete in place on foundations furnished by others.

Contract B

one new bowl assembly installed in existing 350 gpm turbine pump,

one new turbine pump installed in existing no. 3 well, and

one gasoline engine directly connected to new turbine pump,

OR

one new bowl assembly installed in existing 350 gpm turbine pump,

one new turbine pump installed in existing no. 3 well, and

one gasoline engine powered generator set electrically connected into existing power circuit.

II. General Conditions

Each bidder will be required to submit with his proposal a certified check, or bank draft, or bid bond in the amount of 5% of his bid payable to the City of Galena, Illinois.

The character and amount of security required to be furnished for and in connection with the performance of the contract is stated in the proposed contract documents.

No bid may be withdrawn within 30 days from the scheduled closing time for receiving bids.

Any bidder may bid all or any number of items. The right is reserved to reject any or all base bids, to waive informalities, and to accept the lowest responsible bid.

Dated at Galena, Illinois, this 6th day of February, 1952.

THE CITY OF GALENA, ILLINOIS
F. Kenneth Dawson, City Manager

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION. NOTICE IS HEREBY GIVEN that sealed bids on Invitation No. 7038-232 for furnishing and delivering control and relay switchboard for Laramie substation, Kendrick Project, Wyoming, will be mailed to P. O. Box 280, Casper, Wyoming or delivered to the office of the Bureau of Reclamation in time for the public opening at 10:30 a.m., Mountain Standard Time, February 26, 1952, at the office of the Bureau of Reclamation, Reclamation Center, Casper, Wyoming. Copies of the standard forms and of the invitations may be obtained from the following offices of the Bureau of Reclamation: Avery A. Batson, Regional Director, Building No. 46, Denver Federal Center, Denver, Colorado; and I. J. Matthews, District Manager, P. O. Box 280, Casper, Wyoming. No charge for copies of the invitations furnished for bidding purposes; for all others $0.25 per copy, not returnable. Payments should be made by check or money order payable to the Treasurer of the United States.

EMPLOYMENT

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. Forty-first year. Write today.
WILSON Engineering Corp.
College House Offices - HARVARD SQUARE, CAMBRIDGE, MASS.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT
(Additional Positions Vacant Ads on the opposite page)

CHIEF ESTIMATOR for general contractor in middle west bidding heavy construction work. Must be qualified to take complete charge of estimating. State experience, references, availability and salary requirements. P-3284, Engineering News-Record.

CIVIL ENGINEER with sales experience has good opportunity in Pittsburgh territory with large manufacturer in construction field. Must have C.E. degree. Should have experience contacting engineers and contractors. State qualifications in first letter. P-3223, Engineering News-Record.

ENGINEER for City of New Britain, Connecticut Water Department. Topographical surveys. Property and pipe maps. Hydraulic computations. $3328-3952 per annum. Civil Service Commission, City Hall, New Britain, Connecticut.

EXPERIENCED ESTIMATOR and Superintendent for "Gunite" Restoration and High Pressure Grouting. P-3326, Engineering News-Record.

HIGHWAY ENGINEERS—Men having following qualifications: experience in street, road, culvert and bridge layout and design; preparation of highway paving plans, final estimates, development design and layout. Good pay for qualified men with training and experience. Opportunity for advancement. Furnish full information regarding education, training and experience, age, references and salary required. Replies strictly confidential. Department of Public Works, Baltimore County, Towson 4, Maryland.

PROJECTS MANAGER'S Assistant—for office and field coordination, design and construction, process industry plants. Unusual opportunity in growing department of large and long established construction firm. P-2301, Engineering News-Record.

STORM DRAINAGE Engineers—Men having experience in design and preparation of drawings for Storm Drainage Systems including inlets, collection systems, interceptors and culverts. Good pay for qualified men with training and experience. Opportunity for advancement. Furnish full information regarding education, training and experience, age, references and salary required. Replies strictly confidential. Department of Public Works, Baltimore County, Towson 4, Maryland.

SUPERINTENDENT—ASPHALT Plant in New Jersey, must be experienced in operation and maintenance of plant and road equipment, materials and production. Write full qualifications, references and salary. PW-3349, Engineering News-Record.

WANTED: DIRECTOR of Public Works. Engineer experienced in Public Works, Engineering, Maintenance Public Buildings, Supervision Building Dept. & Inspectors. Salary $6,000. Write stating qualifications. Closing date for applications March 1, 1952. Town of Stratford (35,660 population) Conn. Harry B. Flood, Town Manager.

WANTED—ENGINEER experienced in design and construction of water works, sewers and sewage treatment plants. State experience, education, references, salary requirements and when available. P-3350, Engineering News-Record.

WANTED IMMEDIATELY Superintendent thoroughly experienced to supervise on large canal and levee project in Southeast. Must be good organizer, producer, know men and equipment. Write stating qualifications. P-2925, Engineering News-Record.

WANTED, TOP Notch Superintendent for roads, grading, utilities. Familiar with maintenance of equipment. New Jersey area. Salary commensurate with ability. P-3263, Engineering News-Record.

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DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).
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AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. E.N.R.

NEW ADVERTISEMENTS Address New York Office, 330 W. 42nd St., N. Y. 36, for March 6th issue closing Feb. 25th.

(Continued from the opposite page)

EMPLOYMENT SERVICE

SALARIED PERSONNEL, $3,000-$25,000. This confidential service established 1920, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Ira Thayer Jennings, Dept. L, 241 Orange St., New Haven, Conn.

POSITIONS WANTED

CHIEF STRUCTURAL Engineer, graduate C.E. registered with National Bureau, over 25 years experience in design and construction of industrial buildings, bridges, hydro-electric developments, heavy engineering structures; field and office supervision. 10 years foreign service. Knows languages. Desires permanent connection with growing concern. PW-2944, Engineering News-Record.

CIVIL, CONSTRUCTION, Irrigation & Drainage Engineer-Graduate Civil Engineer. Thirty five years diversified experience in technical administration, planning, design and supervision over construction works. Recently completed one year on overseas assignment. Interested in position with major construction company or consulting engineering firm. PW-3286, Engineering News-Record.

CIVIL ENGINEER: Contractor-Engineer representative or supervising engineer. Broad field and office experience, general construction, airports, highways, municipal and major defense projects. Reports Twenty years on responsible assignments in Latin America, West Indies, Pacific Islands and Far East. Fluent Spanish. Willing to travel. Prefer South or foreign but any location considered. Reliable, active and in excellent health. Age 64. Personal interview suggested. Registered P.E. N.Y. Now in New York City. PW-3294, Engineering News-Record.

CIVIL & SOIL Engineer, 35, Design & Field experience on heavy foundation, floating pile, waterfront structures, earth dam and soil investigations. PW-3371, Engineering News-Record.

CIVIL ENGINEER, graduate, licensed, wide experience, construction, municipal work. PW-3375, Engineering News-Record.

CIVIL ENGINEER, 32, married, licensed N.J. 11 yrs. widely diversified experience in heavy construction, desires position with firm in Northern N.J. or vicinity, as Job Engineer or Asst. Supt. Available soon. PW-3328, Engineering News-Record.

CONSTRUCTION EXECUTIVE, Bilingual, wide experience overseas and Canada in planning, coordinating, directing and organizing industrial, public works, transportation, concrete and pipe line jobs as Chief Engineer Estimator and Project Manager, working for internationally known construction company, desires immediate change. Excellent references. Ready to take charge of interests and development of American firm in Canada; partnership or career job with interests. PW-3383, Engineering News-Record.

CONSTRUCTION EXECUTIVE—Solid and varied experience as Superintendent and engineer. Versatile, well rounded in every type and phase of heavy construction. Sound knowledge of operations, engineering, costs, and financial problems. Graduate and Registered professional engineer. Available in March. $12000 to $15000 bracket. PW-3390, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT, background of engineering, masonry, and carpentry with following. Cleveland area. PW-3279, Engineering News-Record.

Permanent Positions Open to

ENGINEERS

. . . after training at full-time pay . . . as

Consultants in Fire Protection Engineering

to top U. S. and Canadian industry. Usual pension and other benefits. Excellent opportunities; fast-growing engineering organization.

Write complete qualifications to:
P-2807, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

WANTED

Manufacturing Representative

Nationally known and advertised concern selling construction equipment replacement parts thru construction equipment and welding supply dealers and distributors has several open territories. Our employees know of this ad. Write in complete detail regarding territories around, lines carried, personal history and reference in confidence.

RW-3355, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

SALES ENGINEER

A mid-western manufacturer of large earth moving and open pit haulage equipment, with world wide sales organization, desires several outstanding sales engineers. Opportunity immediately available for men with a minimum of five years experience, qualified to assume complete responsibility for field engineering sales assignments.

In reply please furnish complete resume and indicate salary desired and willingness to relocate and travel.

SW-3361, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED

ENGINEER

To head dam division on our consulting engineering staff.

P-3272, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

CONTACT MAN with connections for well established CONSULTING ENGINEERING FIRM. Twenty-four men: qualified, registered Engineers and Architects specializing in Structural Steel Design, Concrete Design, Plant Layout and Conveyor Design, Structural Steel Detailing, Piping, and Architectural work of any nature. Liberal commission plan.

P-3205, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

POSITIONS WANTED

ENGINEER, REG. 42 years experience, design, construction, roads, turnpike, tunnels, rights of way, housing buildings, schools, and etc. Available for investigations, reports, arbitrations, expert witness. PW-3374, Engineering News-Record.

EXECUTIVE, CHIEF Accountant or Controller, nineteen years of diversified experience, eight years of it in construction. Sober, reliable and capable of taking complete charge. PW-3320, Engineering News-Record.

FOREMAN, WALKING Boss, Irish-American, 47 years of age. 30 years experience on Highway Construction. South or Central America preferred. PW-3342, Engineering News-Record.

GENERAL CONSTRUCTION Superintendent, experienced in concrete bridges, highways, airports, asphalt paving, and all types of sewer and water main Installations, Industrial buildings, Mechanical Installations, Marine Pile driving. 20 years Experience, Sober, will travel and relocate, age 50, not a college graduate. PW-3269, Engineering News-Record.

GENERAL FOREMAN, 20 years experience, all phases of highway construction. Can organize and manage any size job. Available at once. PW-3167, Engineering News-Record.

OFFICE MANAGER, Accountant Auditor—Now employed desires permanency—17 years diversified experience in heavy, industrial, refinery and housing construction. All phases of accounting, payroll and timekeeping. PW-3322, Engineering News-Record.

SUPERINTENDENT 25 years construction experience, bridges, dams, disposal plants, pumping stations, concrete structures, sewer and water systems, heavy excavation rock and soil, waterfront work, etc. Good organizer, know men and equipment, familiar with labor and material costs and distribution. Available immediately, any location. PW-2931, Engineering News-Record.

BUSINESS OPPORTUNITY

Contractors: Civil Engineer
desires active and financial participation in a small reliable construction company. Background: M.I.T. graduate, experienced superintendent, registered engineer. BO-3324, Engineering News-Record.

Semi-Portable Rock or Gravel Crushing Plant

New 150 T.P.H. Plant for rent on tonnage basis with operating personnel.

FR-3336, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

(2) DIESEL GENERATING UNITS (2)

For Sale

2—500 HP Winton diesels, 360 RPM, with 438 KVA, 2400/3/60 Whse. generators complete with 8 panel switchboard and all accessories.

VILLAGE OF ARCADE, N. Y.
Luke F. Sharon, Supt. Public Works

TUNNEL EQUIPMENT

ELECTRIC LOCOMOTIVES, with extra batteries

3—Whitcombe, 10 Ton, 36" Gauge
6—Greenburgs, 11 Ton, 36" Gauge

MUCKING MACHINES

3—Eimco Rockershovels, Model 40
4—Conway-Muckers, Model 75

CARS

38—5 Cu. Yd. Side Dump, 36" Gauge

MISCELLANEOUS

2—Roots-Connersville Blowers, 7300 c.f.m.
3—40 K. W. Battery Charging Units
2—20 K. W. Battery Charging Units
16—Ingersoll-Rand DA 35, wet type, Drifter Drills
24—Ingersoll-Rand S 70 Motor Feed Drifters
10—Ingersoll-Rand No. 229 DJB Drill Booms
12000—lineal feet 24" Vent-Pipe, 14 Ga. Lock Joint
2—60 K. W. Diesel Generator Sets
Transformers, various sizes
Electric Cable
Electric Pumps, various sizes

Subject to Prior Sale

FRAZIER-DAVIS CONSTRUCTION CO.
1319 Macklind Ave., St. Louis 10, Mo. Sterling 1950
Grahamsville, New York, Box 153 Grahamsville 2861

STEEL

For Immediate Delivery

100 Tons 8" x 36# Bearing Piles
100 Tons 10" x 42# Bearing Piles
100 Tons 12" x 53# Bearing Piles
100 Tons 8" x 31# H-Beams
100 Tons 10" x 49# H-Beams
100 Tons 12" x 65# H-Beams

We can book above sizes in all other weights for shipment from mill.

We can also furnish from stock I-Beams, Channels, Angles, and Plates.

Contact us for all Structural Steel items.

ALBRO STEEL COMPANY
47-29 VAN DAM STREET
LONG ISLAND CITY 1, N. Y.
STILLWELL 4-2720 DIRECT WIRE VIA
STILLWELL 6-5448 WESTERN UNION

40,000 gallon tank
50,000 gallon tank on 100 foot tower
100,000 gallon tank on 125 foot tower
WE BUY AND SELL
ALL SIZE TANKS AND TOWERS

Air Compressors
Guaranteed — Reconditioned
160-800 CFM, all very good condition
$1850 up

1200 CFM I. RAND Diesel driven, 350 RPM, rebuilt 1945, $9,950. Boiler, New Babcock & Wilcox, 800-1500 HP, high or low pressure, never used $10,000

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E. J. McCallum, Jr.
805 Housatonic Ave. Bridgeport, Conn.
4-9471

ELEC. AIR COMPRESSORS

10—691, 800 & 881 C.F.—YCM 110 V.
690 CFM WORTHINGTON 125 HP, 440 V.
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43 Ton Gantry Whirley Crane
1—WASHINGTON 120 BOOM 24'5" GA. ELEC.

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15 TON EUCLID
Rear Dump Trucks

Good Condition. Large Group to Choose From.

STANDARD EQUIPMENT CO.
Wilkes-Barre, Pa. Phone 2-1174

FOR SALE

Model 180 Single Pumpcrete
1000' of pipe and fittings
For Quick Sale—$5500.00

ABERTHAW COMPANY
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Phone Highlands 5-6700

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New Complete Shovel Attachment for Koehring Model 304

F. H. FRIEDE
736 N. Park St. Reedsburg, Wisconsin
Phone 16

1—P & H Crawler Crane

Model 855-BLC, Serial 11377, 75 ft. sectional boom Koehler lighting plant, powered with General Motors Diesel Engine Serial 5C1150G20. Price $30,000.00

JOHN MOHR & SONS
3200 E. 96th St. Chicago 17, Ill.

FOR SALE
TWO LIMA MODEL 750 DRAGLINES

Both equipped with 70 foot boom, 2¼ cubic yard Page bucket, Caterpillar D-17000 engine and long crawlers. Both machines recently overhauled and in good condition. Four years old. Location, Oklahoma.

SALLISAW STRIPPING COMPANY
Box A Sallisaw, Oklahoma

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For Sale

4—MACK TRUCKS

SWEENEY BROS.
40 POPLAR ST. SCRANTON, PA.
Telephone 5245

FOR SALE
"Used Smith Tilting Concrete Mixer

28 cu. ft. cap. with 20 hp electric motor, water tank & hopper. All in A-1 condition. Make offer."

GAMBLE CONSTRUCTION COMPANY
804 Pine St. St. Louis 1, Mo.

FOR SALE

1—Northwest 80D Serial No. 7350, Combination Shovel, Crane and Dragline, with 100 ft. boom, 15 ft. jib and fair leads. Murphy Diesel Engine.
1—Caterpillar D8 Angledozer Serial No. 2U1079.
1—Caterpillar D8 Angledozer Serial No. 2U469.
1—Caterpillar D8 Angledozer Serial No. 8R3915.
1—Caterpillar D8 Angledozer Serial No. 1H2961.
1—Caterpillar R1 Angledozer Serial No. 6G1165SP.
2—Euclid Tractors Model 6FDT with Bottom Dump wagons.
1—Super C. Tournapull Serial No. C3T2837CIF with L. P. Scraper, Cummins Diesel Motor.
1—A.C. HD 7 Angledozer Serial No. 13728.
1—Lima Paymaster Comb. Shovel & Backhoe.

These Machines have all been overhauled within the last year and are in Excellent Condition and are real buys.

SANCTIS CONSTRUCTION, INC.
110 Marlow St. Pittsburgh 20, Pa.
Walnut 1-9000

FOR SALE

DIPPER STICK AND BACKHOE ATTACHMENTS for ½ yard Michigan Machine.

C. FORSYTHE
127 Mt. Kemble Ave. Morristown, N. J.

FOR SALE
ONE USED MODEL B MILLER TILT TOP TRAILER

Of ten tons rated capacity, equipped with electric brakes, four 8.25 x 15 ply tires, hydraulic tilt control and directional lights. Inspection by appointment.

DEPT. OF PUBLIC WORKS
City of Hudson, City Hall, Hudson, N. Y.
Phone—Hudson 8-5110

Plymouth 35-ton gasoline locomotive, std. ga.
Locomotive cranes, diesel & gas, 10 & 30 tons.
Walking draglines, 3, 5, 6, 7, 12 yds.
Shovels, Draglines, Cranes, 1¼ to 10 yds.
Universal 18"x36" r.b. jaw crushers, rebuilt (2); Nordberg 36"x48" jaw crusher; 16", 30" gyratories.
Floating Derricks, 75, 50, 15 tons, steam.
Wash. Iron Wks.-Marion elec. Whirley gtry crane.
Euclid and Mack Trucks, 15, 22, 32 tons.
Buckeye 120, 160, 224; Parsons 25, 250 trenchers.
H. Y. Smith Co., 828 N. B'way, Milwaukee 2, Wis.

BATCHING PLANT

Complete 200 cu.yd. five compartment bin with two cement compartments, elevators, 24" conveyor belt, 1200 barrel auxiliary cement storage silo. Suitable for contractor or ready-mix concrete plant. Knocked down. Ready to ship.

FS-3367, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

FOR SALE—NEW STEEL

We can furnish your requirements for prompt delivery in Galvanized Steel Sheets, Imported, 16 gauge through 30 gauge, any sizes; domestic and imported REINFORCING RODS, ASTM 15/39, MILD GRADE, ⅜" through 1½" inclusive; cold rolled ROUNDS, I-BEAMS, H-BEAMS, PLATES, SHEETS, ANGLES, AND OTHER STEEL PRODUCTS, MOST ANY SIZES, ANY QUANTITY, WRITE

Box FS-3298, c/o Engineering News-Record,
330 West 42nd St., New York 36, N. Y.

FOR SALE
7000 feet—Shielded Preassembled Aerial Cable

5 KV—2-0—3 Conductor w/copper shielded tape—Used but in good condition—Corona resisting rubber insulation.

FS-3393, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

SQUARE AND HEX HEAD

MACHINE BOLTS

LARGE QUANTITIES OF 5/8 AND LARGER DIAMETERS ARE BEING ADDED TO OUR STOCK FOR

Immediate Shipment

FAST SERVICE ON ANY QUANTITY—We stock fasteners of every type in all materials—Five warehouses to serve you.

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STRONGHOLD SCREW PRODUCTS INC.

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WHitehall 4-5680 • Teletype CG-527

or STRONGHOLD in your Phone Book at

CLEVELAND
NEW YORK
ATLANTA
DOWNEY (Los Angeles)

DIESEL GENERATOR SETS

A.C. UNITS

- **200 K.W.—G.M. 8-268A** Eight cylinder—6½" x 7"—1200 r.p.m.—440/3/60—with switchgear.
- **100 K.W.—G.M. 3-268A** Three cylinder—6½" x 7"—1200 r.p.m.—440/3/60—with switchgear.
- **30 K.W.—G.M. 3-71** Three cylinder—4½" x 5"—1200 r.p.m.—37.5 K.V.A.—220/440 volts—60 cycle—93 amps—4 wire—with panel board.
- **100 K.W. LORIMER** ENGINE: 150 HP—7½" x 9½"—five cylinder—4 cycle—720 r.p.m.—electric starting. GENERATOR: Allis-Chalmers—100 K.W.—440/3/60—80% P. F.—with switchgear.

D.C. UNITS

- **100 K.W. SUPERIOR GBD8** 5½" x 7" — 120/240 volts D.C.—417 amps.—with switchgear.

Other Sizes Available—Inquiries Invited

OTHER ITEMS

- **DEMING DEEP WELL PUMP** Turbine type — 900 G.P.M.—290 ft. head—6 stage—22 ft. column. DRIVE: Right angle—Johnson Gear Box.
- **STEEL MASTS** 5 available — 50' long — 30" diam. — ¾" stock. Can be used for underpinning.

WRITE—WIRE—PHONE

THE BOSTON METALS CO.

313 E. Baltimore St. CU 5050 Baltimore 2, Md.

FOR SALE:

300 tons used Bethlehem AP-3 Sheet Piling 18—30 Ft. Lengths.

59 Pcs. Bethlehem DP-2 new Sheet Piling 40 Ft. Long.

6 Athey and Euclid 7-10 C.Y. Crawler Wagons.

A. S. WIKSTROM, INC.
Skaneateles, N. Y.

Lorain MC 414 Truck Crane #14488
NW 6 Backhoe, Crane Drag #13205
Backhoe attachment for B.E. 22B.
D6 TRAXCAVATOR #9U1138 Good
1 Hyster D8N Towing Winch
D-6 w/Cable Angledozer #8U1440
Cat. D 4 with Hyd. Bull Dozer 7U6200 series
2 #49 FD Euclid Rear Dumps 7700 series
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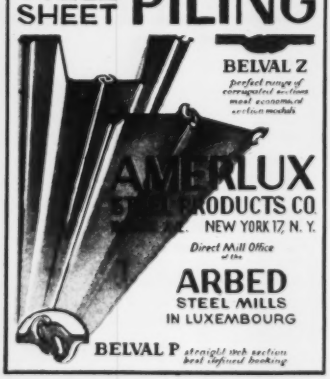

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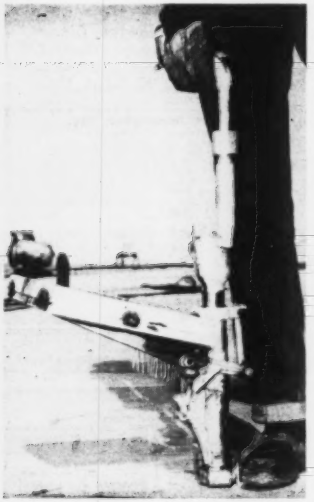

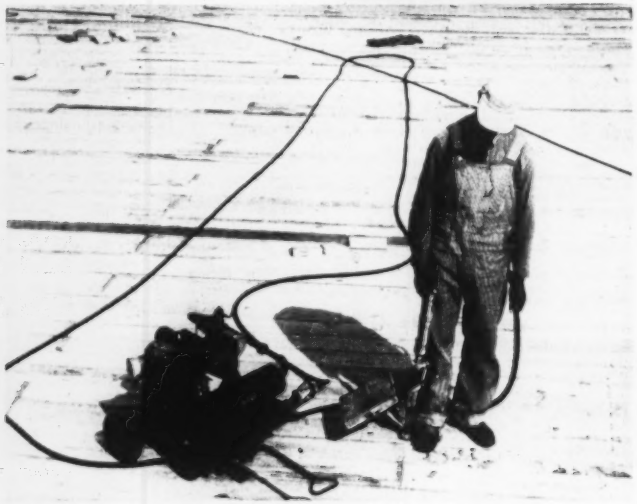

Automatic nailer "walks" over 21-acre roof

The amazing new automatic and pneumatic nailing machine shown here is called the Nu-Matic Nailer. On the 21-acre roof of the new Chrysler plant in Los Angeles this machine and one operator nailed down the entire roof, keeping four crews of men busy laying 2x8 tongue-and-groove planking just a step ahead of it.

The machine is operated by compressed air. The operator guides it with a foot stirrup, moving his foot along to each nailing position and working the handle up and down to set nails in place for the hammer which works by hand trigger. The hammer drives nails at the rate of 1,000 blows per min. The machine will nail a minimum of 5,000 sq ft per day (1x6 on 16-in. centers) and 100 nails per min. Using 6d common to 20d common nails, it is practical up to a 4/12 pitch and weighs only 30 lb.

Adjustable for left or right handed operators (or for short or tall men) the machine requires 12 cu. ft of air with pressure at 90 lb. As shown in the photo at the right, 100 ft of ½ in. hose is recommended. The hopper holds 500 nails which feed automatically into the driving slot. Each nail is countersunk to prevent damage to roof coverings. The job pictured above was handled by the William P. Neil Co., Ltd. and the entire job was completed in 51 8-hr days.

The Nu-Matic Nailer is not for sale. The company rents the equipment, furnishing the nailer, air compressor, hose, maintenance, repairs, etc. A contractor may hire a qualified operator recommended by the company and carry him on his payroll. NATIONAL NU-MATIC NAILER, INC., 2900 ROWENA ST., LOS ANGELES 39, CALIF.

Island roller gives quicker, better road compaction

T. F. Baun, president of Baun Construction Co., Fresno, Calif., reports that a single Buffalo-Springfield tandem roller, equipped with the new Gardner roll, was used to compact the soil cement treated base, the base course plant mix surface and the finish course on the recently completed 3-mile California State Highway Project on Manning Road in Fresno County.

According to president Baun, the Gardner roll, with its 72 compression "islands" produced higher compaction of the soil cement base than possible to achieve with conventional methods. In addition, the machine produced better compaction of the plant-mixed base course, and the final surface

(*Continued on page 92*)

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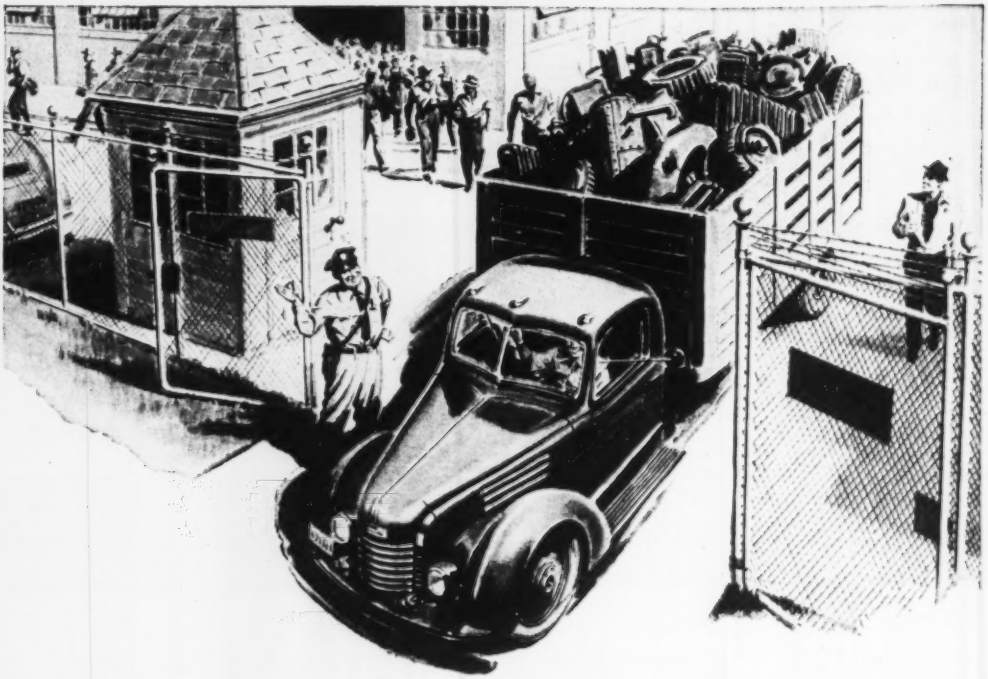

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Every plant has some—search out the iron and steel scrap in yours

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For help in this emergency, search your place for scrap; specifically: obsolete machinery and equipment . . . no-longer-used jigs and fixtures . . . worn-out or broken chain, wheels, pulleys, gears, pipe, etc. . . . abandoned metal structures.

If it's gathering rust or dust, it may be scrap—and more valuable being remade into steel than cluttering up your premises.

Write for booklet, "Top Management: Your Program for Emergency Scrap Recovery", addressing The Advertising Council, 25 West 45th Street, New York.

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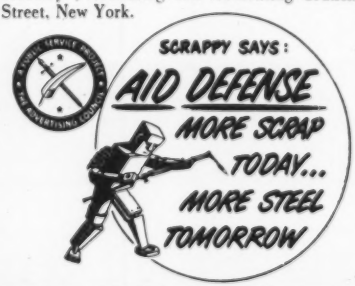

Manufacturers Publications . . .

Woolridge Terra Cobras—The new Woolbridge Model TC-S142 Terra Cobra self-propelled scraper is described in an 8-page bulletin just released by the manufacturer. Operational features and mechanical details are shown in a series of sectional, cut away and assembly views. The machine has a heaped capacity of 17.5 cu yd and is powered by a 225 hp Cummins diesel engine. Ask for Bulletin No. TC-707. WOOLRIDGE MANUFACTURING COMPANY, SUNNYVALE, CALIFORNIA.

"Facts on modern placement of concrete through air entrainment" is the title of a 44-page book now available. Successive chapters tell what the air entraining agent is, what it does for the contractor, what it costs, what it does for the concrete itself, and how it is used. Charts, graphs, pictures and drawings are included in the booklet which describes Protex air-entraining agent. And one page of bibliography contains eleven selected references on air-entrainment of concrete. AUTOLENE LUBRICANTS CO., INDUSTRIAL & RESEARCH DIVISION, DENVER 9, COLORADO.

Transmissions and reduction gears—Engineering data on transmissions and reduction gears is elaborately described and illustrated in a booklet put out by the Cotta Transmission Company. The essential dimensions of single speed reduction gears are shown on drawings. The company invites requests for information on diagrams, capacity tables, dimensions and complete specifications. One typical example where a heavy-duty reduction unit was used was the instance where a contractor changed a crane from steam to diesel power, and the Cotta reduction unit was used to adapt the new engine output speed to meet conditions in the original crane mechanics. COTTA TRANSMISSION COMPANY, ROCKFORD, ILLINOIS.

Flexible tubing—Spiratube-M is a flexible, light-weight, reinforced fabric duct especially designed for mine and tunnel ventilation. Its unique design makes it most economical and efficient in conveying air to underground workers. This 8-pager describes the product's construction, rapid coupling and uncoupling ability, unimpeded airflow around bends, etc. A 25-ft section of 24-in. tube scales at slightly more than 83 lb. Diameters range from 6 to 30 in., and injuries to the fabric can be easily patched with a handy repair kit. FLEXIBLE TUBING CORPORATION, GUILFORD, CONN.

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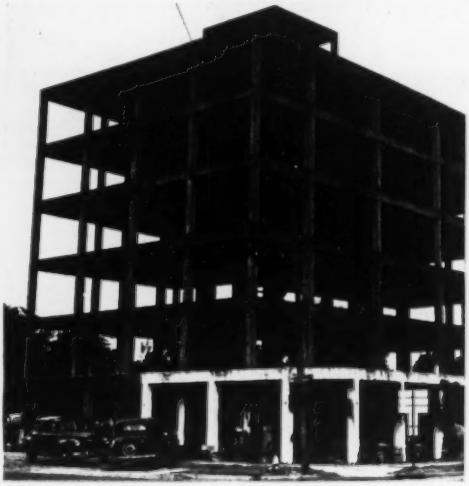
RITZ-CARLTON HOTEL near Sarasota is most impressive of Florida's skeletons. It may at last be completed as a resort center.



"SKELETON HOTEL" in the heart of Fort Meade's business district is another building boom relic stirring new interest.

Florida's skeletons get a second look

Talk of Florida's land boom was on everyone's lips in 1926. Every newspaper and magazine in the country carried real estate advertisements extolling the wonders of the modern Babylon. Millions made the exodus to the tropical land of fortune; some to make a quick buck, others just to see if it was all true. It was! There has never been anything quite the equal of it before or since. It was perhaps the culmination of the greatest speculation craze that has ever swept the nation.

On January 14, 1926, ENGINEERING NEWS-RECORD carried an eye-witness examination of the boom that described the hysterical chaotic scene of frantic buying against a backdrop of corner stakes and street signs without streets.

Then the bubble burst.

More stable remnants of the boom provided a foundation for later growth in Florida, but the "glorious" promises were shattered. Today, dotting the Florida landscape, skeletons of buildings, started in the heyday of speculation and abandoned before completion when the boom went sour, remain as a grim reminder of the failure. Now that we are in the midst of another building boom, less pretentious, perhaps, but more economically sound, these skeletons serve as a reminder and warning of the more frivolous past.

• **Second chance**—But many of these skeletons may still get a chance at life. At the University of Miami a skeleton, originally planned in 1926 as the main building of the infant college, was finally completed last year. Original plans for a Spanish-style architecture were abandoned, and a new ultra-modern functional design was styled to fit over the old framework of concrete and steel.

• **New interest**—Now other skeleton buildings throughout the state are stirring new interest. Owners of these partly finished buildings report investors eyeing the skeletons, that are structurally sound, with the idea of finishing them.

Perhaps the most imposing of these is the Ritz-Carlton near Sarasota. This giant hotel was nearly complete, with almost a million dollars worth of construction finished, when the developers went broke. It was first taken over by the state for taxes and later bought by a syndicate. There are reports now that Northern interests are weighing the advisability of buying the property and building a resort center using as much of the original structure as possible.

In Oldsmar, Fla., a full-sized alligator has made his home in the elevator shaft of an unfinished and long abandoned hotel. Only one floor and the basement were finished before the bust, but the owner, C. H. Lister of Tampa, claims the construction is structurally sound and he will sell to anyone who wants to finish it.

On Clearwater Beach the skeleton of the Mandalay Hotel is a favorite spot for lovers and picknickers. The hotel was planned and footing installed for eight stories but only the basement and first floor were completed. The present owner, B. C. Skinner, has put it on the market for $125,000 and reports several inquiries.

"Hotel Skeleton" is the name that has been tagged to another unfinished structure that dominates the main business district of Fort Meade in central Florida. Asa Lewis, the cattleman-owner, reports that several persons have been interested in the price and terms for the concrete and steel frame of the building.

Perhaps these and other skeleton hotels finally may see completion. If building costs continue to soar, the dreams of the boomtime promoters may yet be realized.

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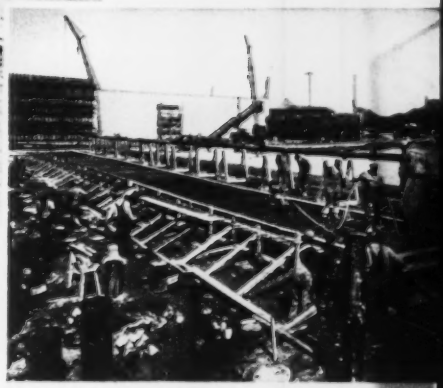

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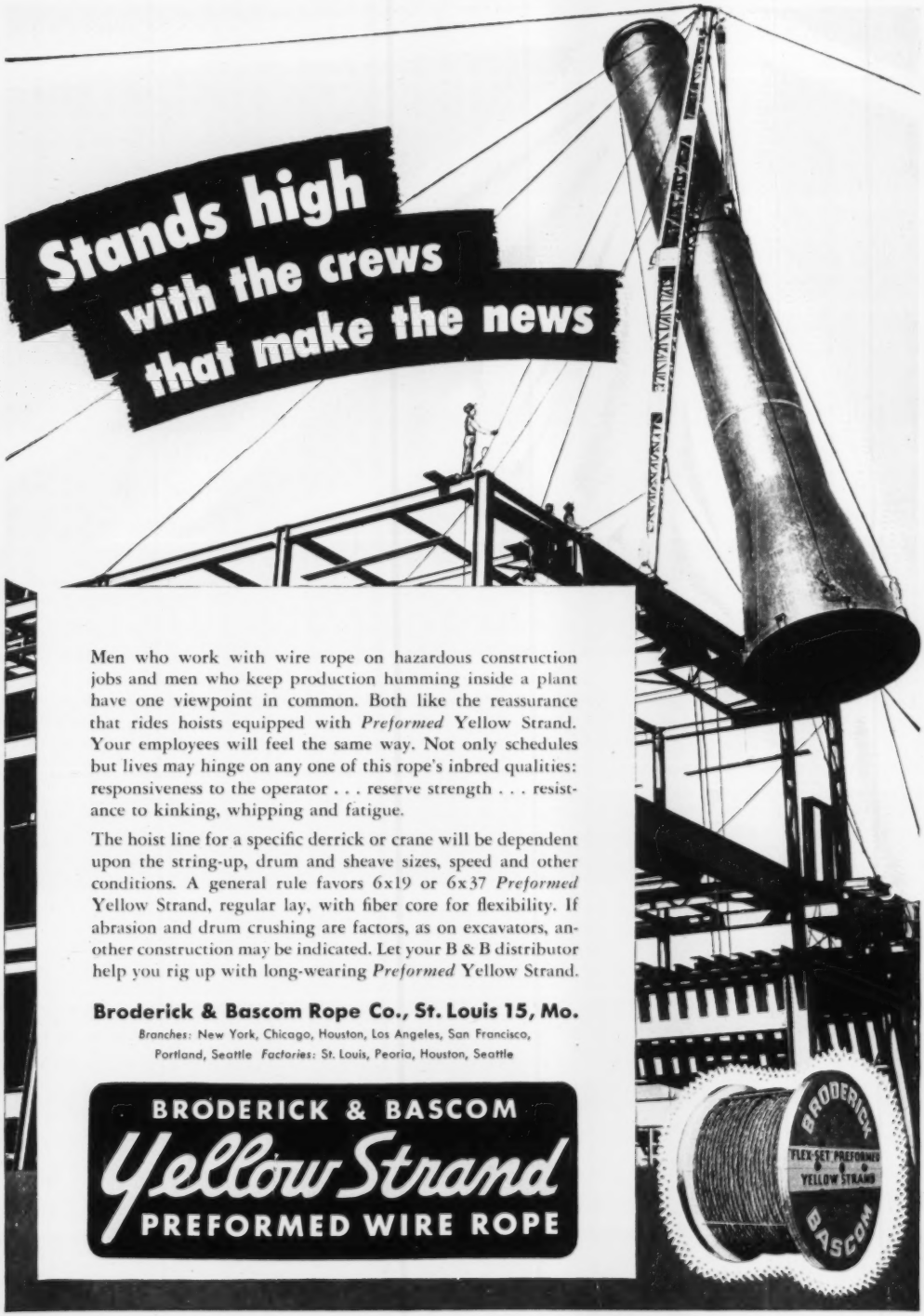

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